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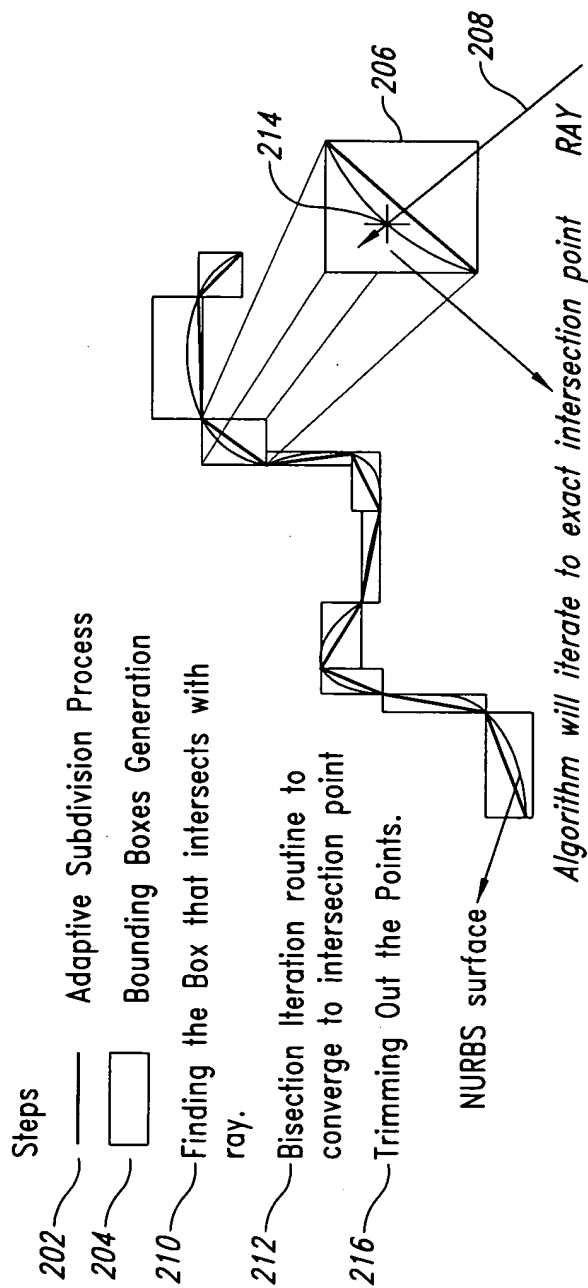


FIG. 2

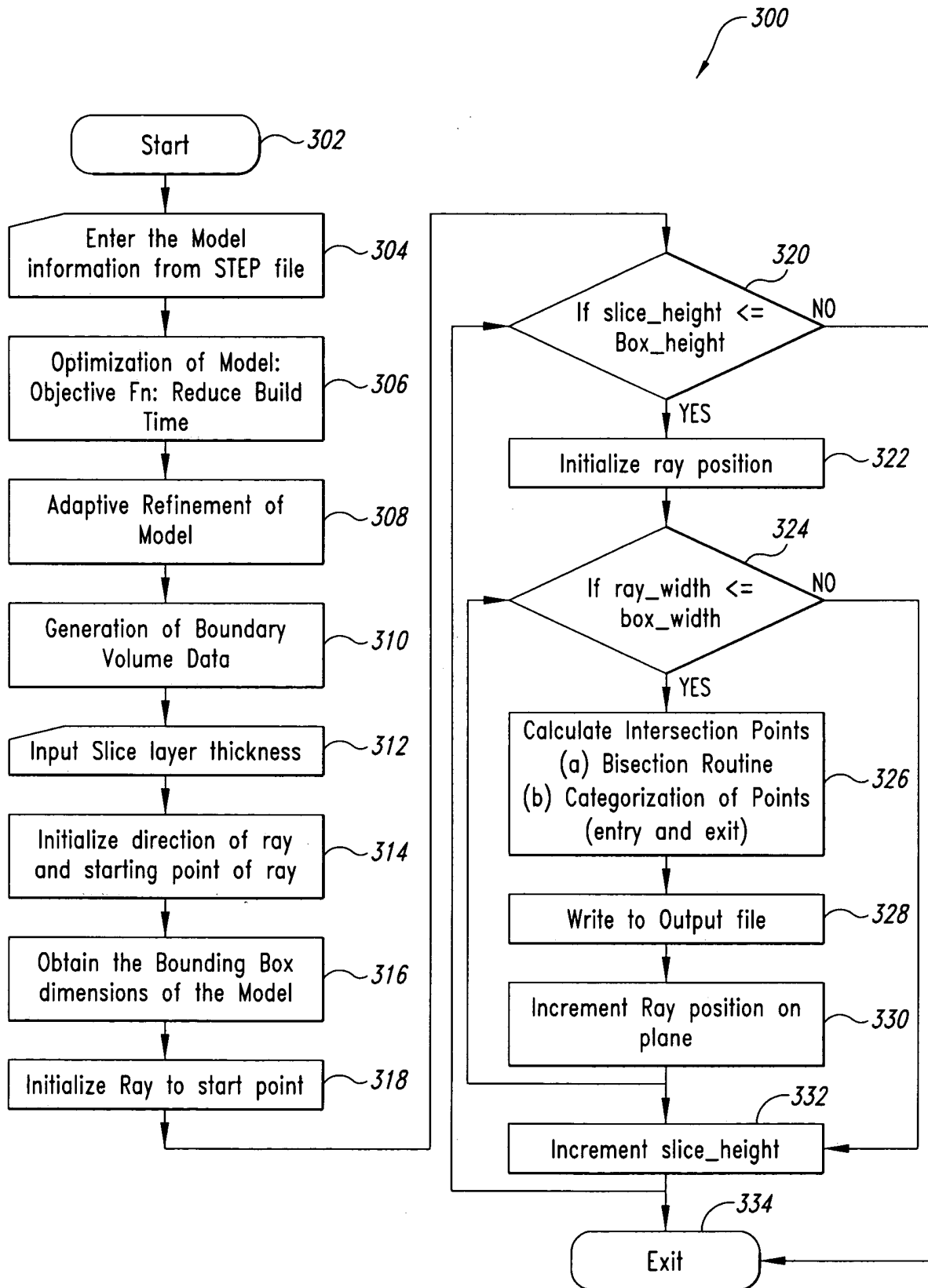


FIG. 3

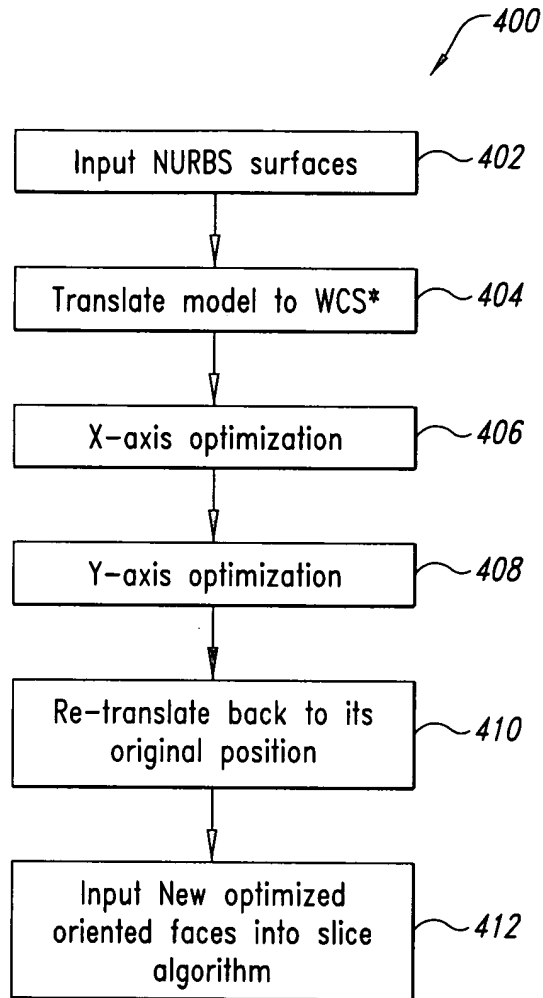


FIG. 4A

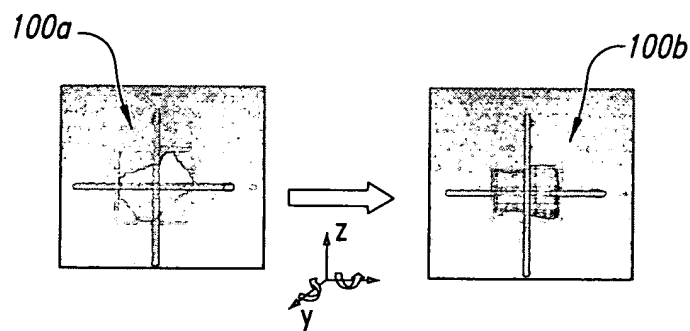


FIG. 4B

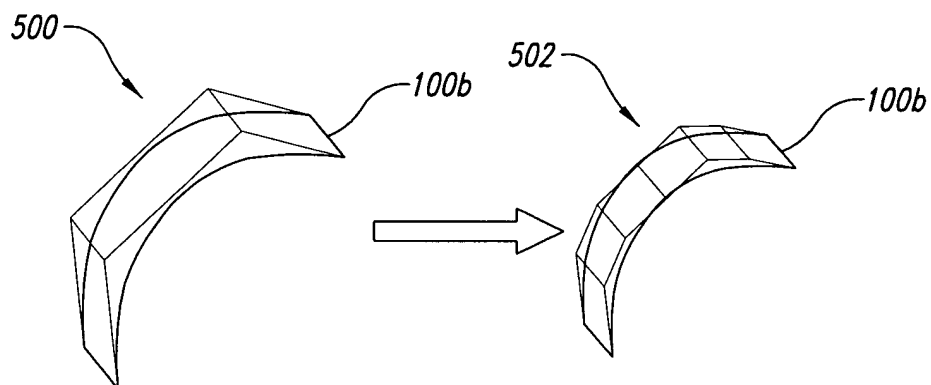


FIG. 5

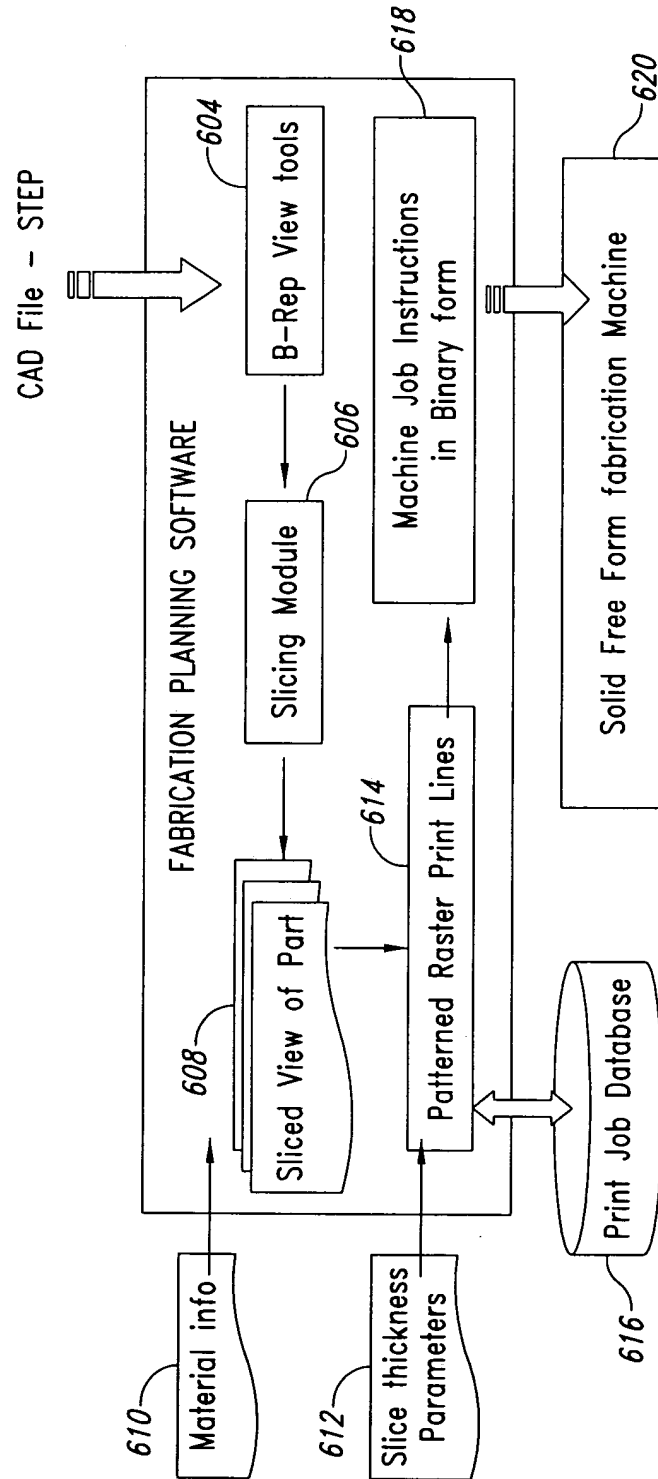


FIG. 6

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

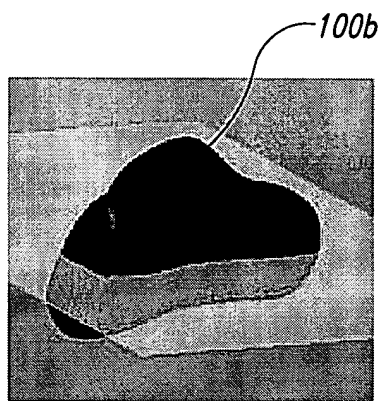


FIG. 7A

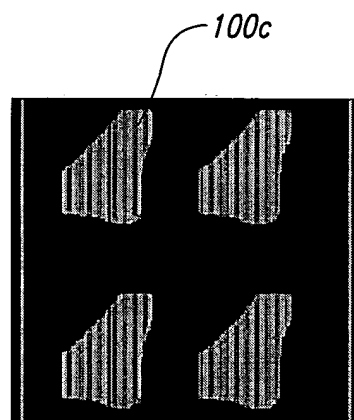


FIG. 7B

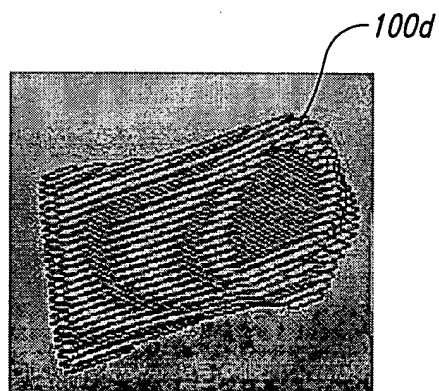


FIG. 7C

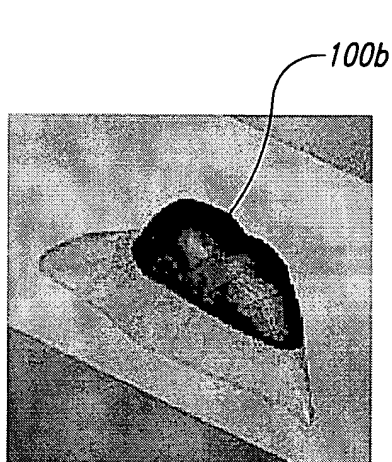


FIG. 8A

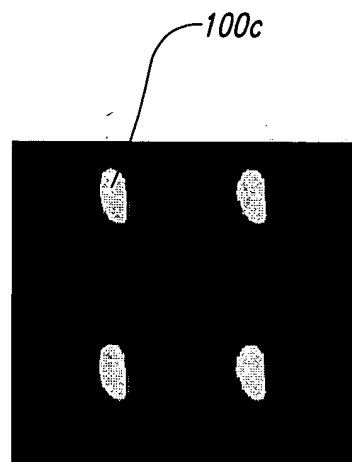


FIG. 8B

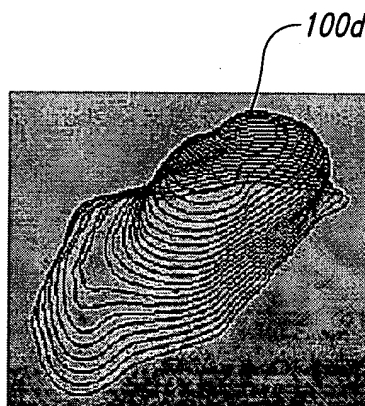


FIG. 8C

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

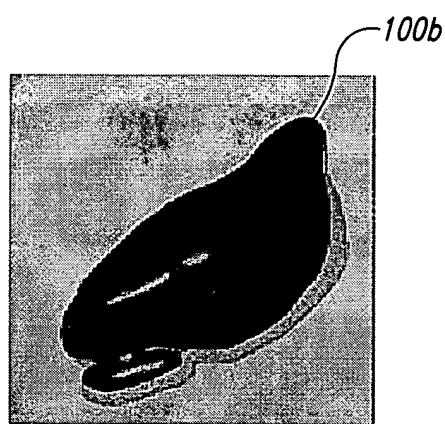


FIG. 9A

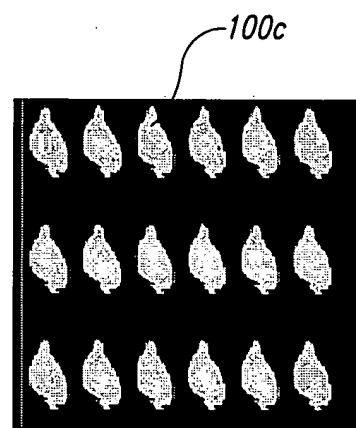


FIG. 9B

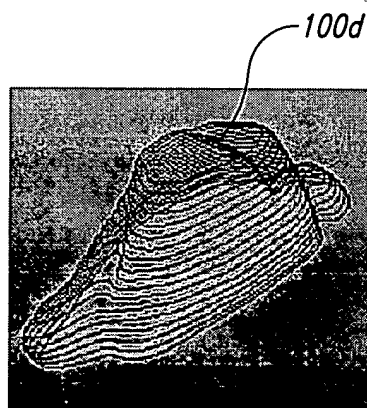


FIG. 9C

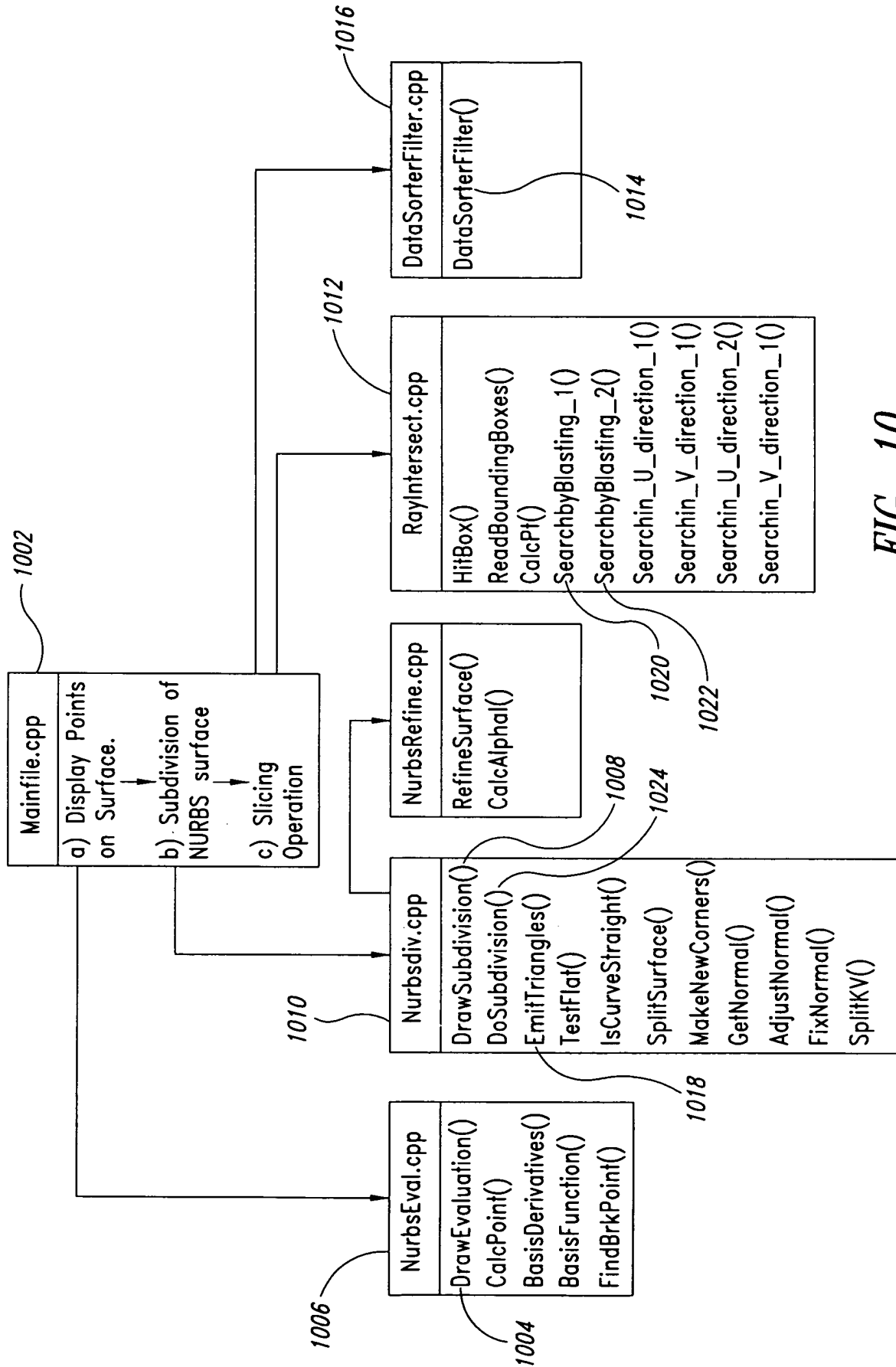


FIG. 10

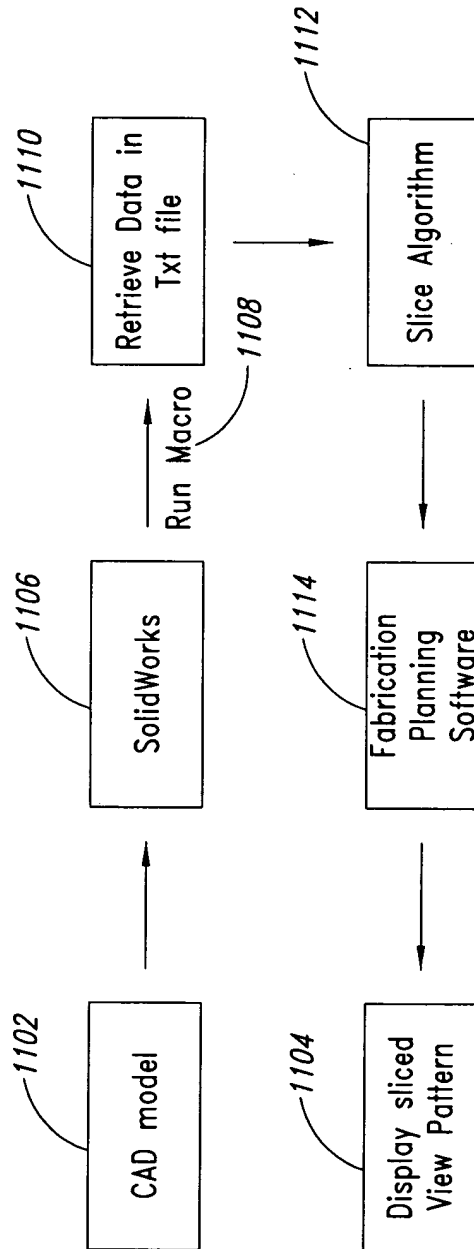


FIG. 11

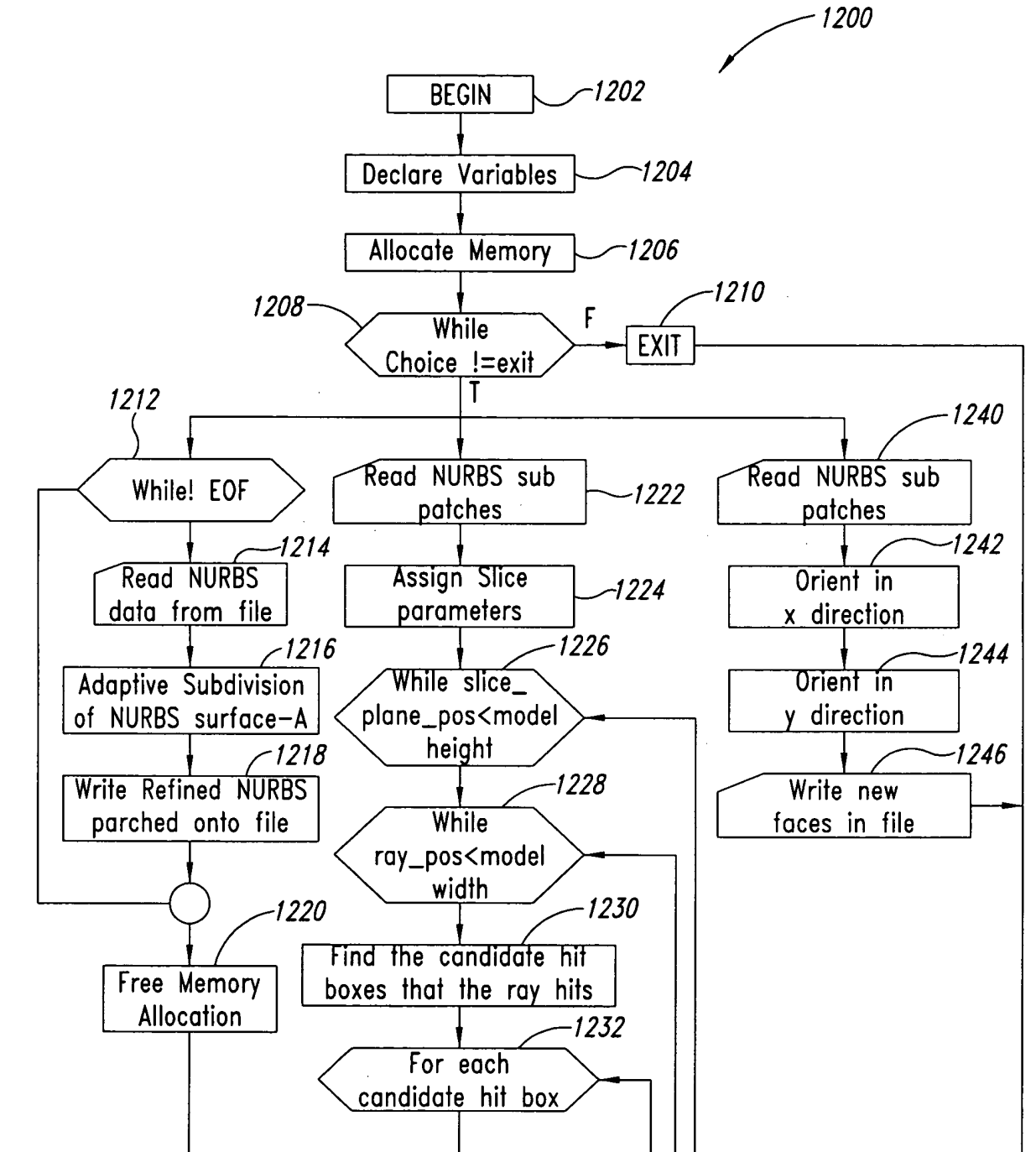


FIG. 12A

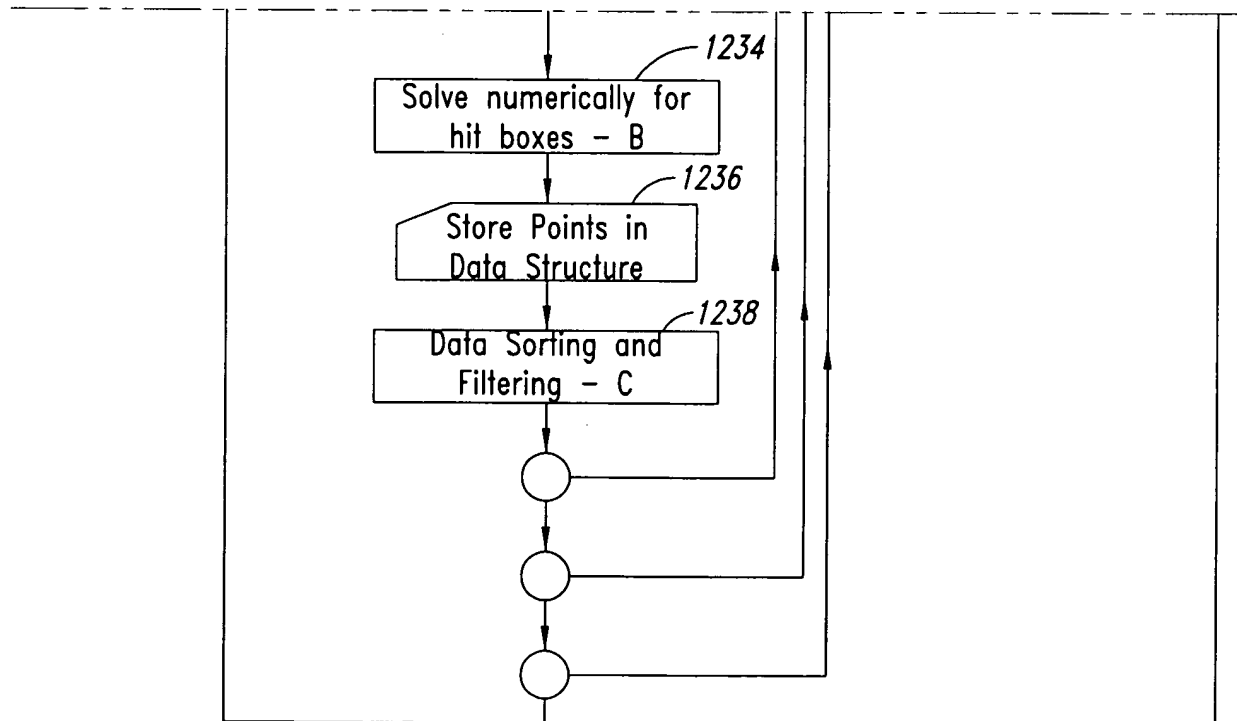


FIG. 12B

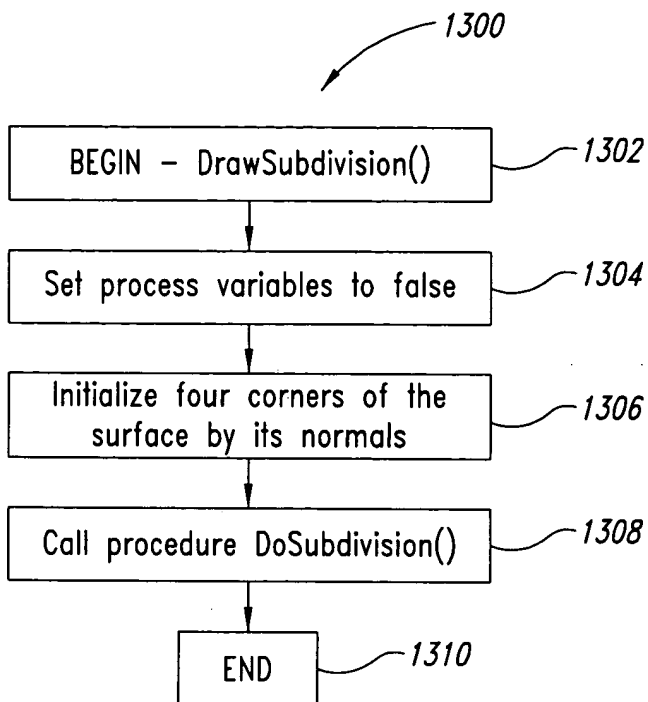


FIG. 13

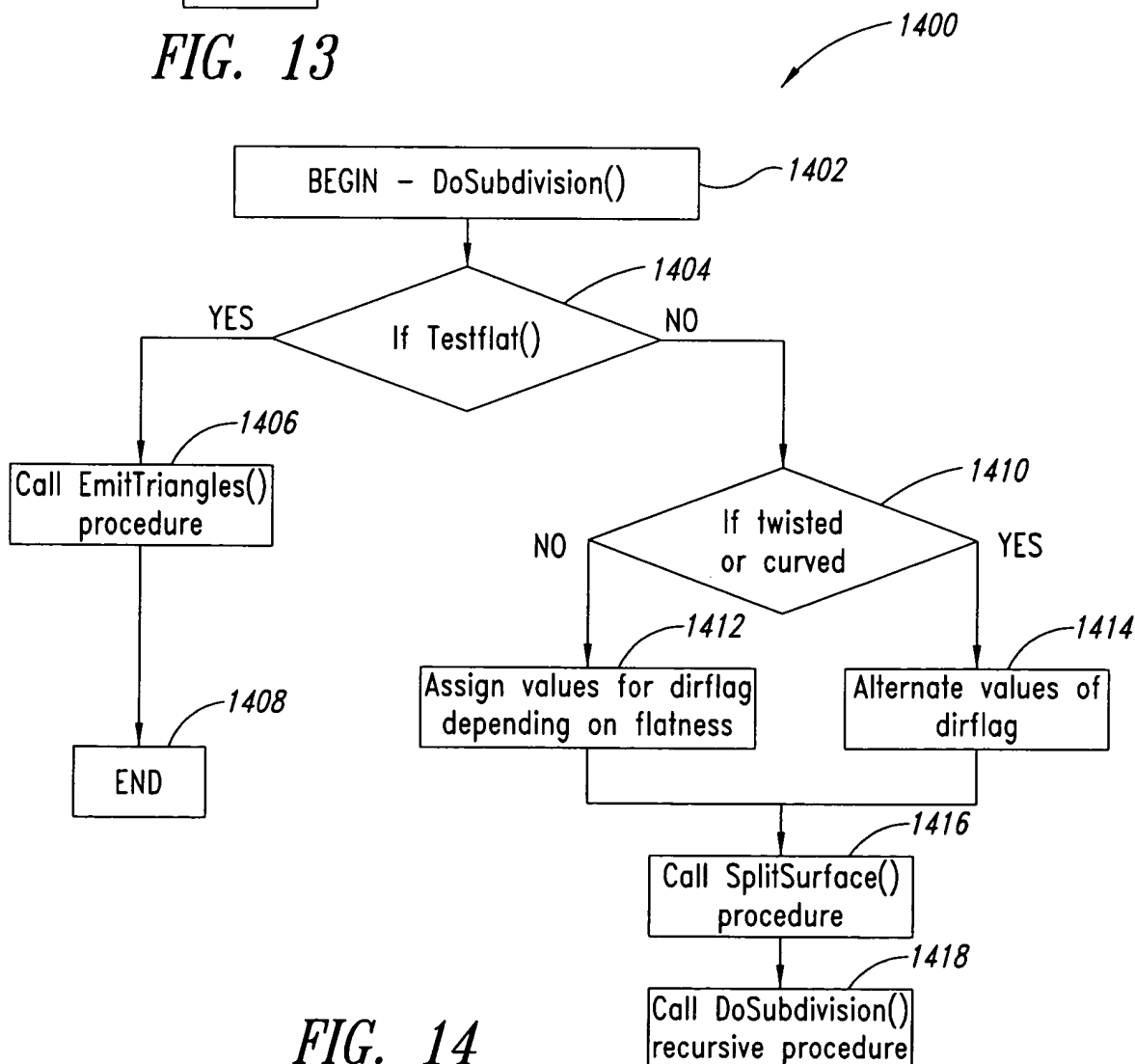


FIG. 14

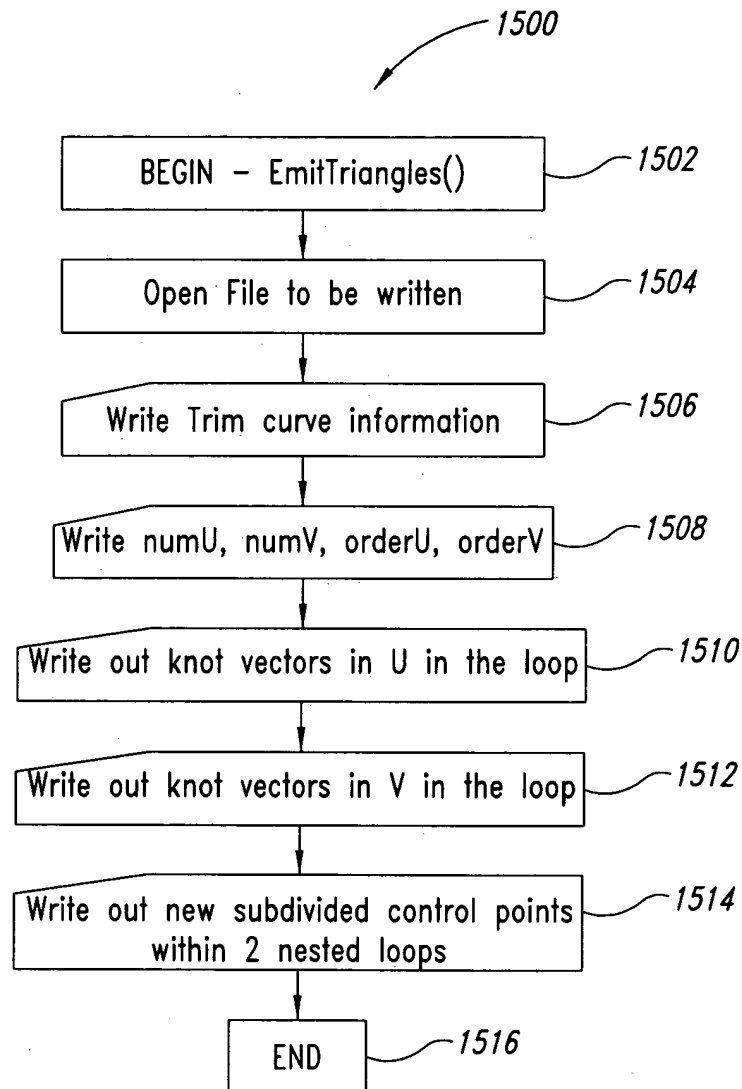


FIG. 15

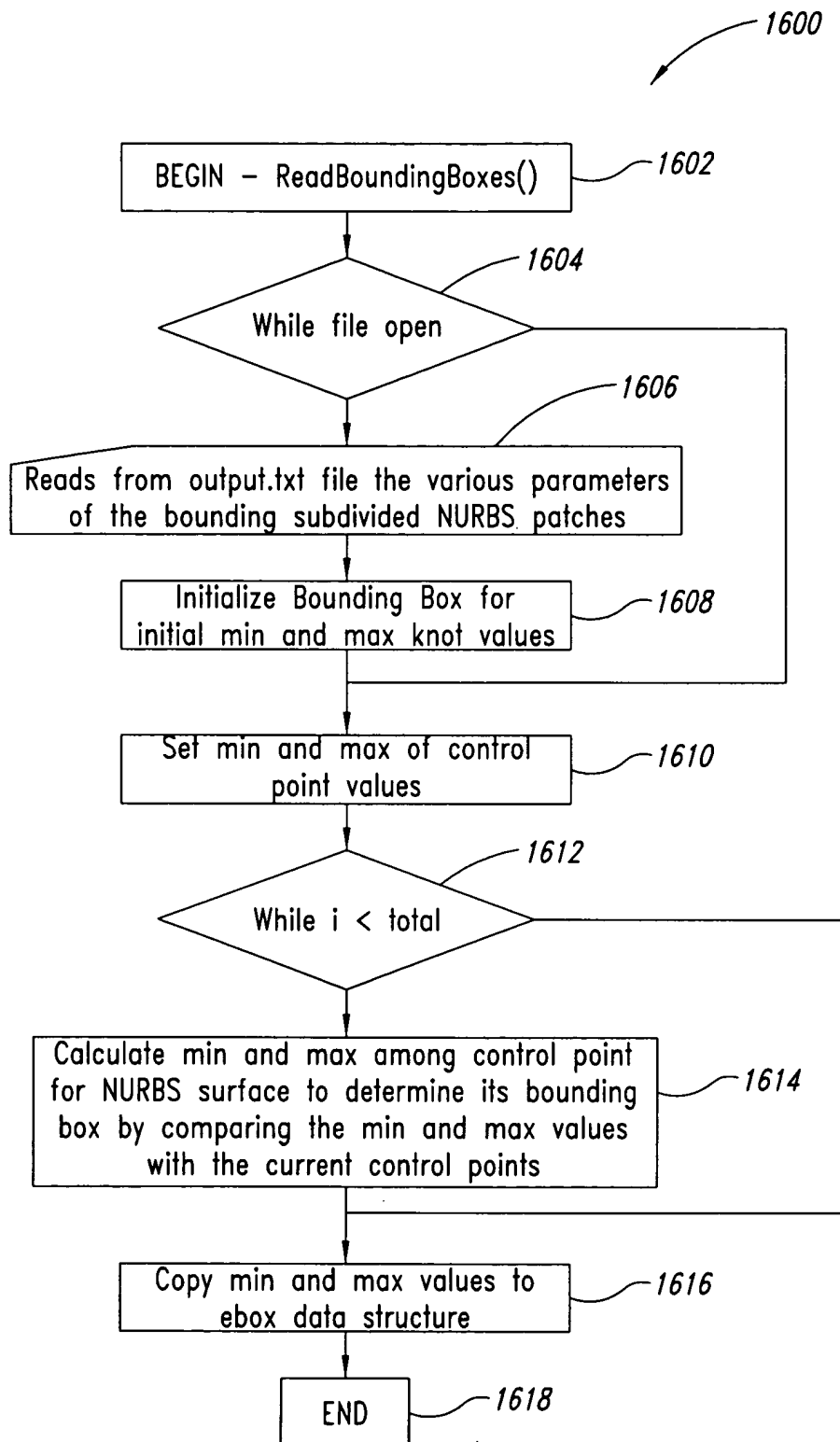


FIG. 16

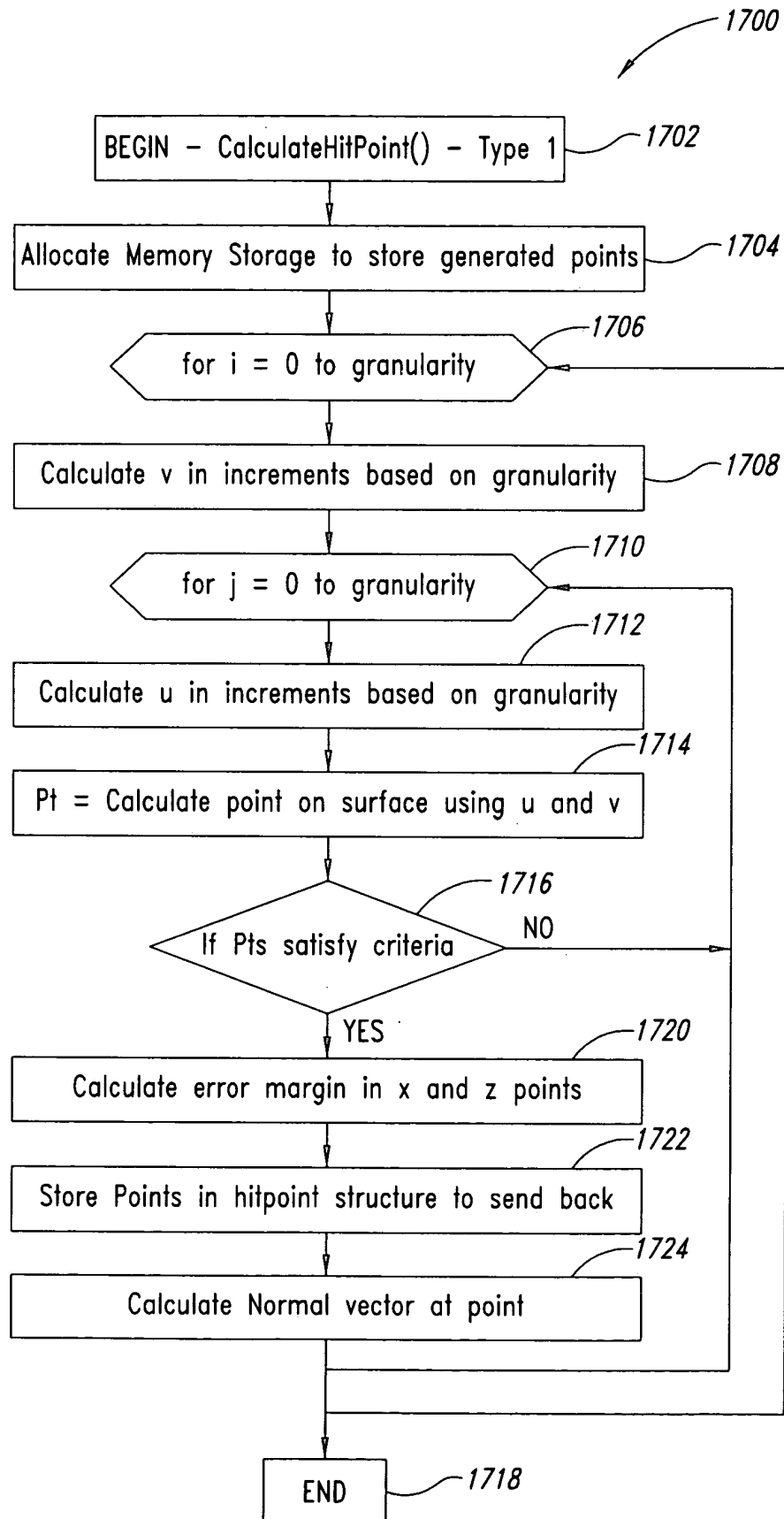


FIG. 17

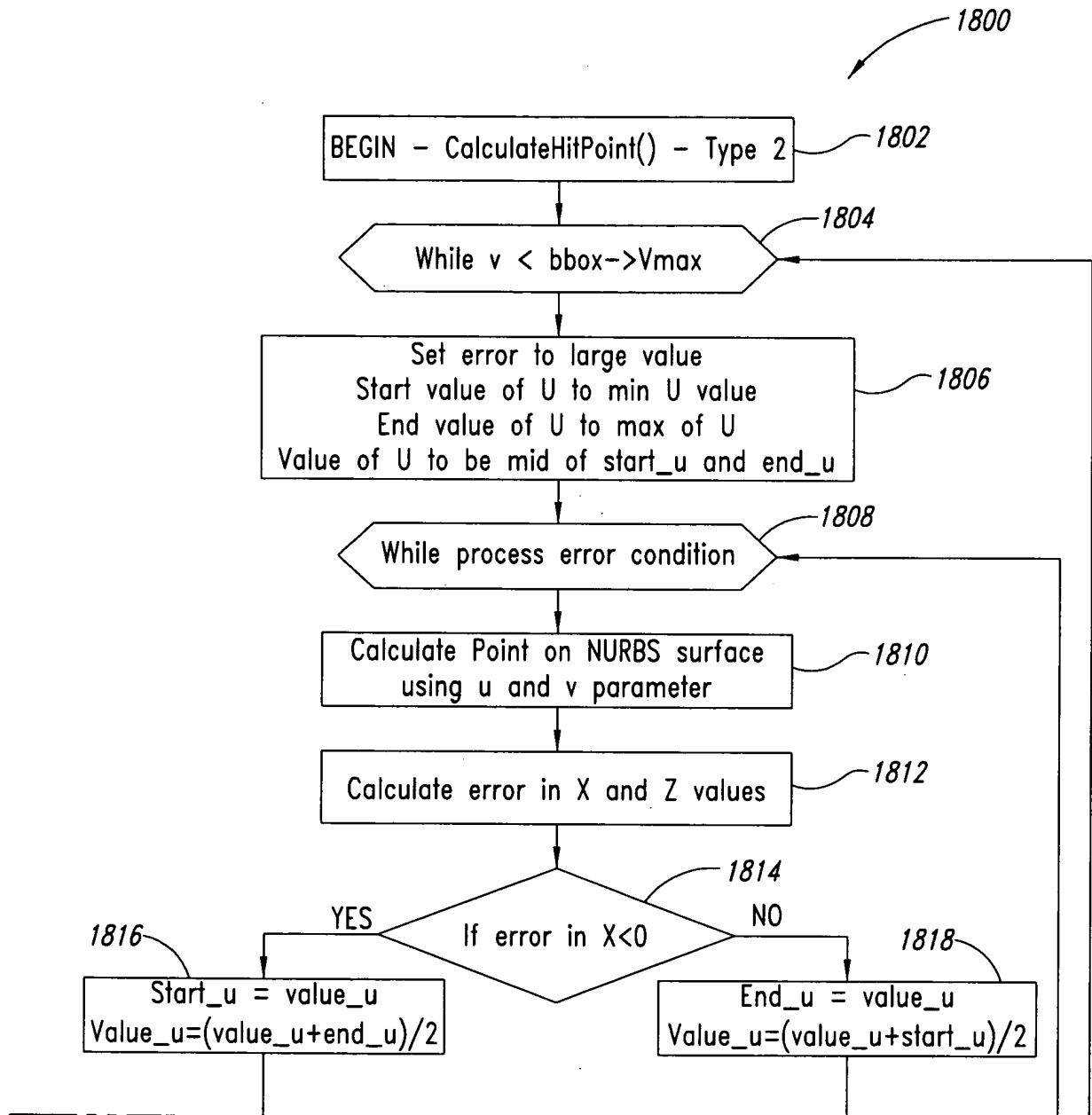


FIG. 18A

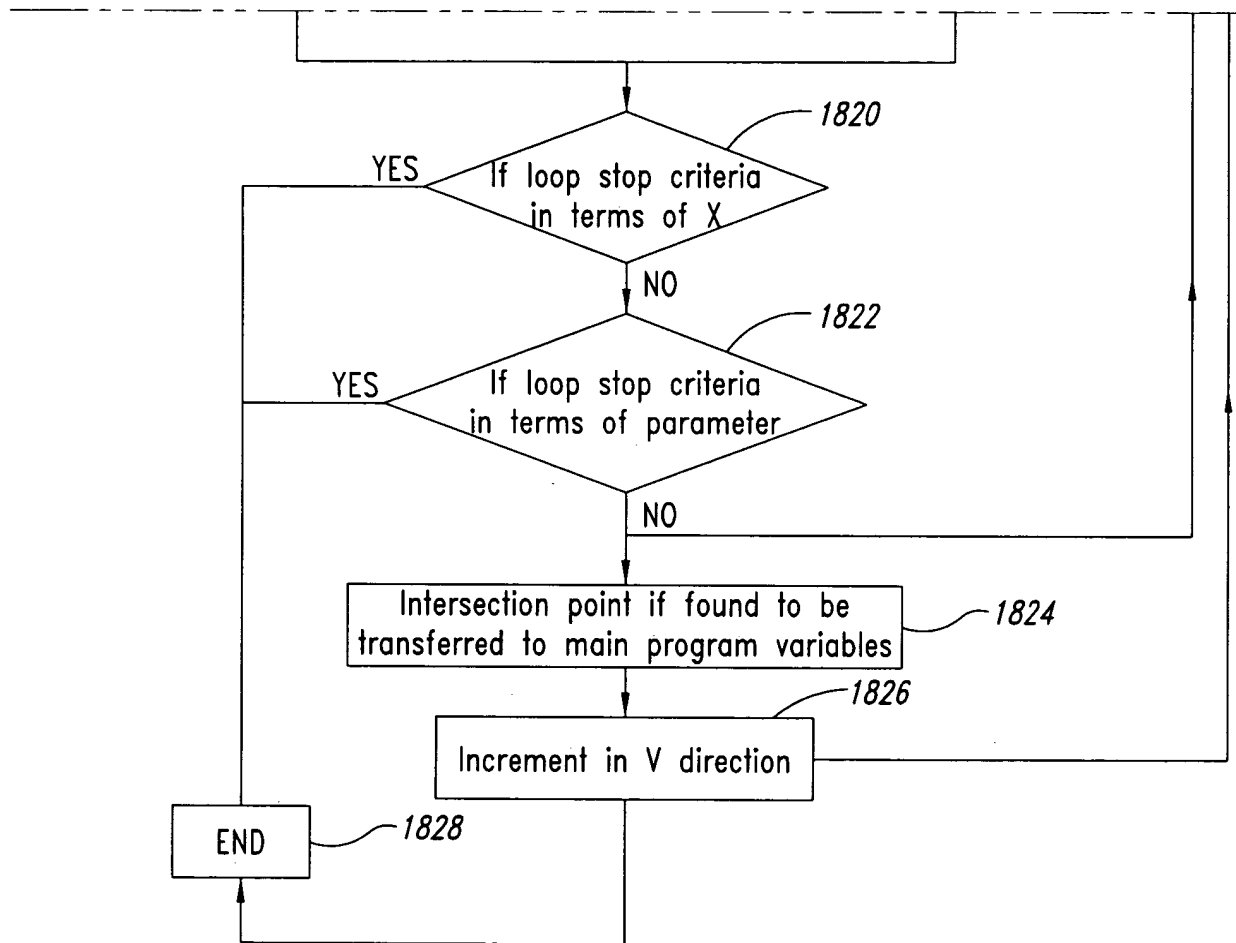


FIG. 18B

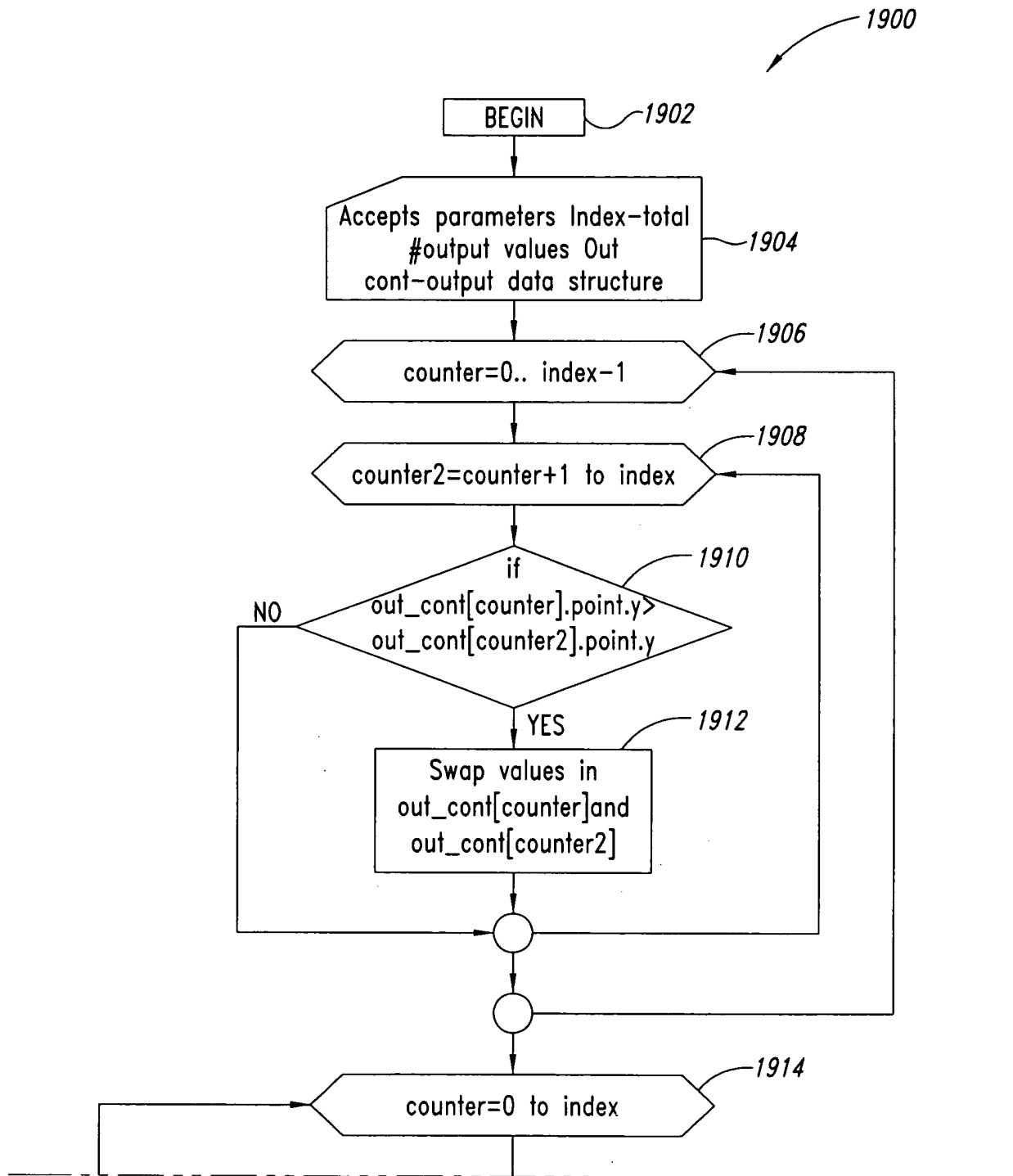


FIG. 19A

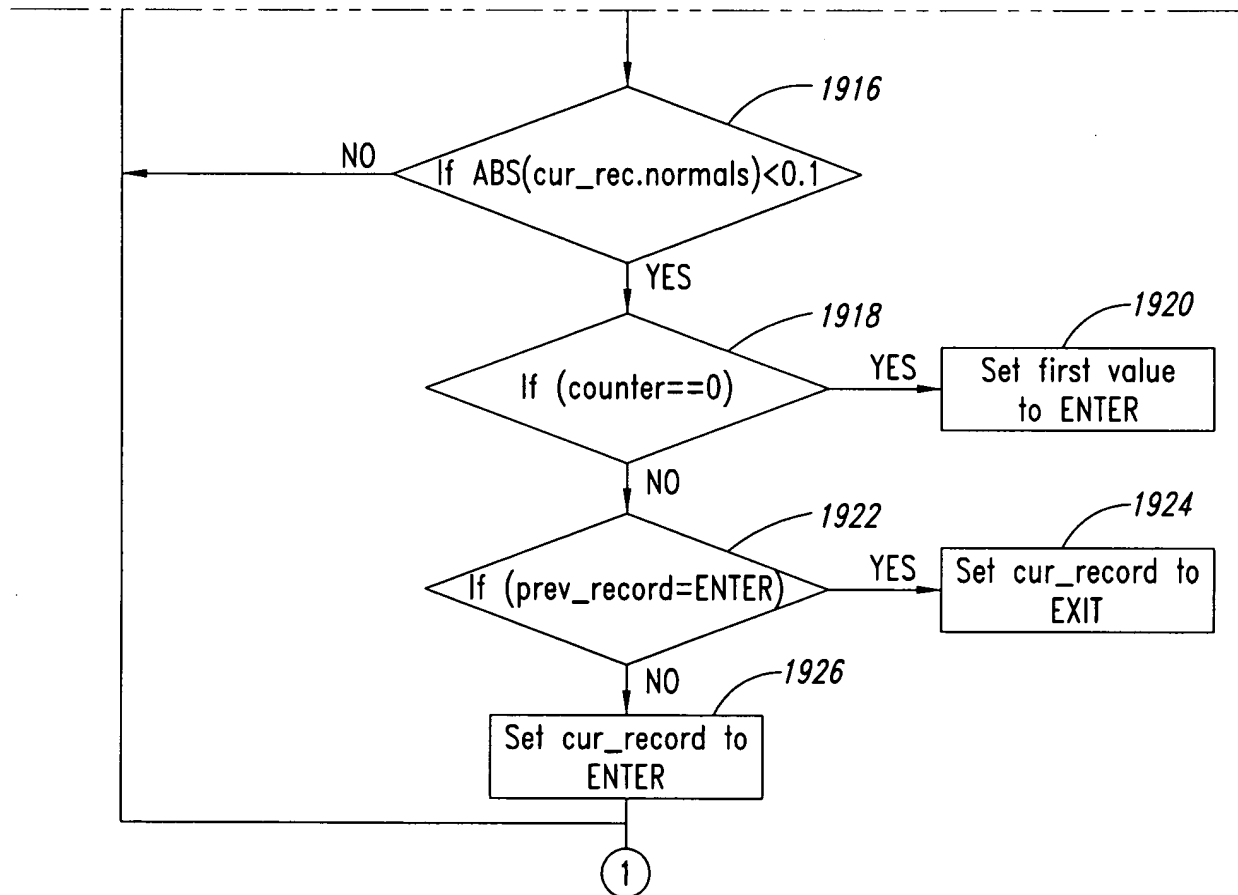


FIG. 19B

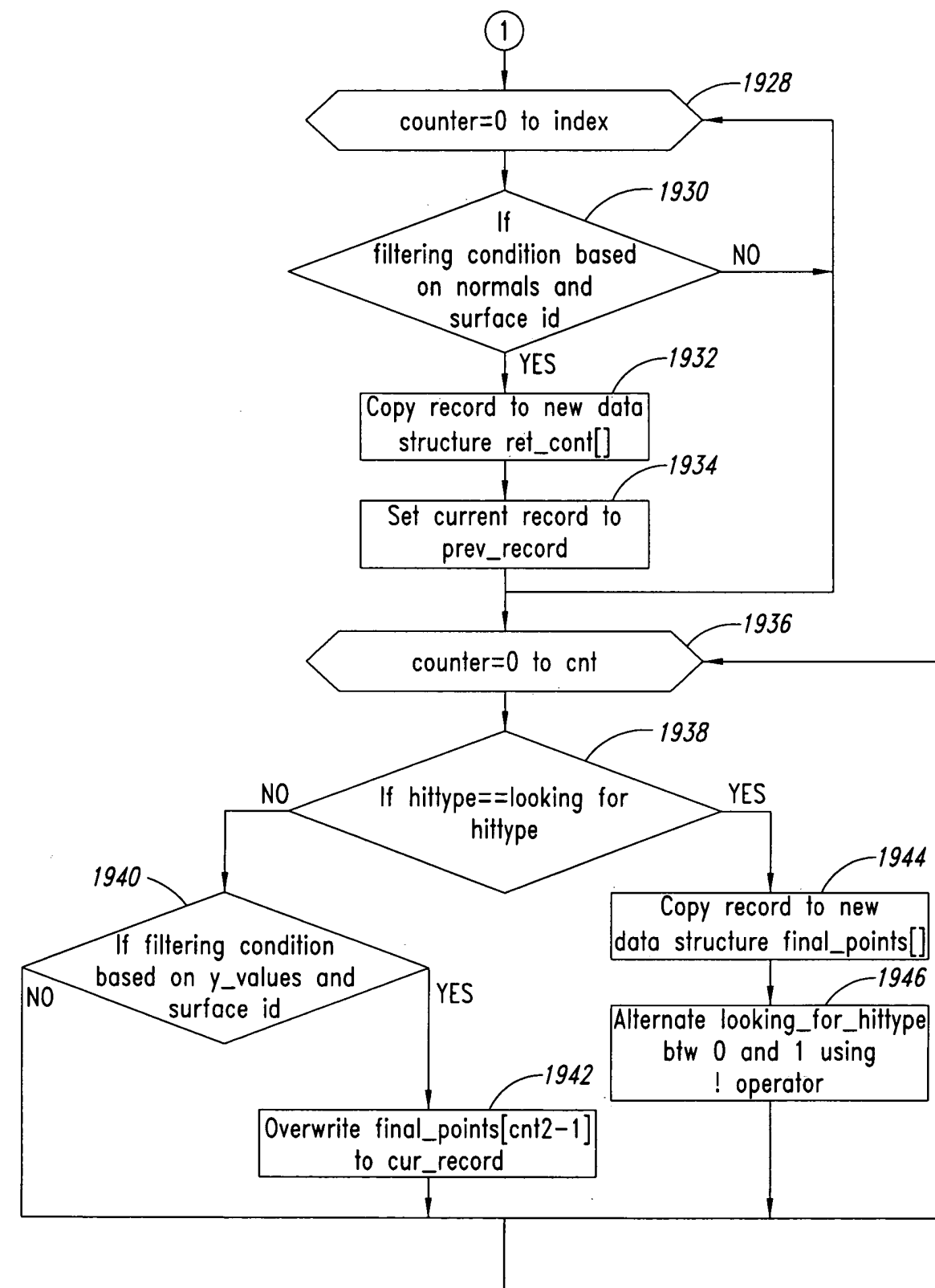


FIG. 19C

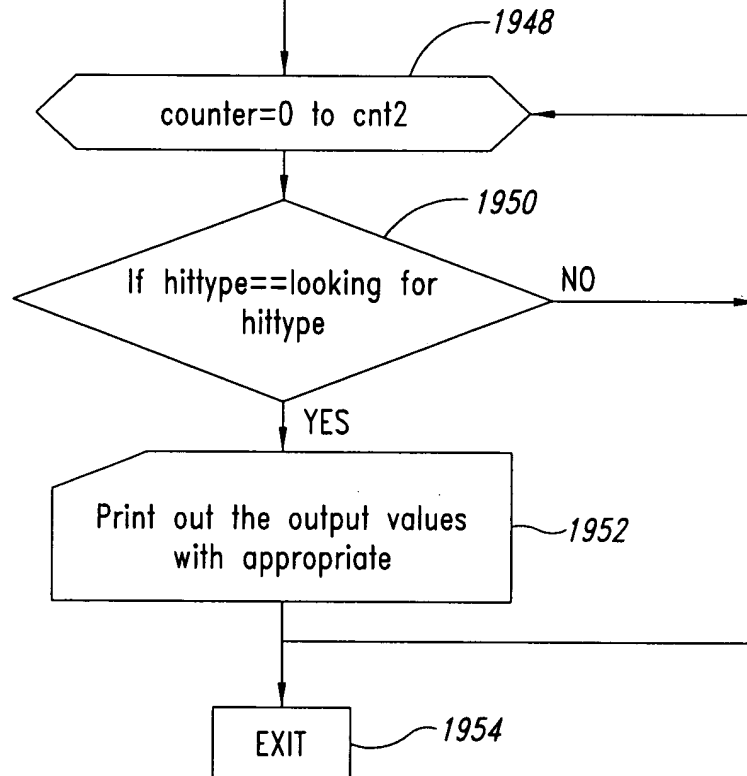


FIG. 19D

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

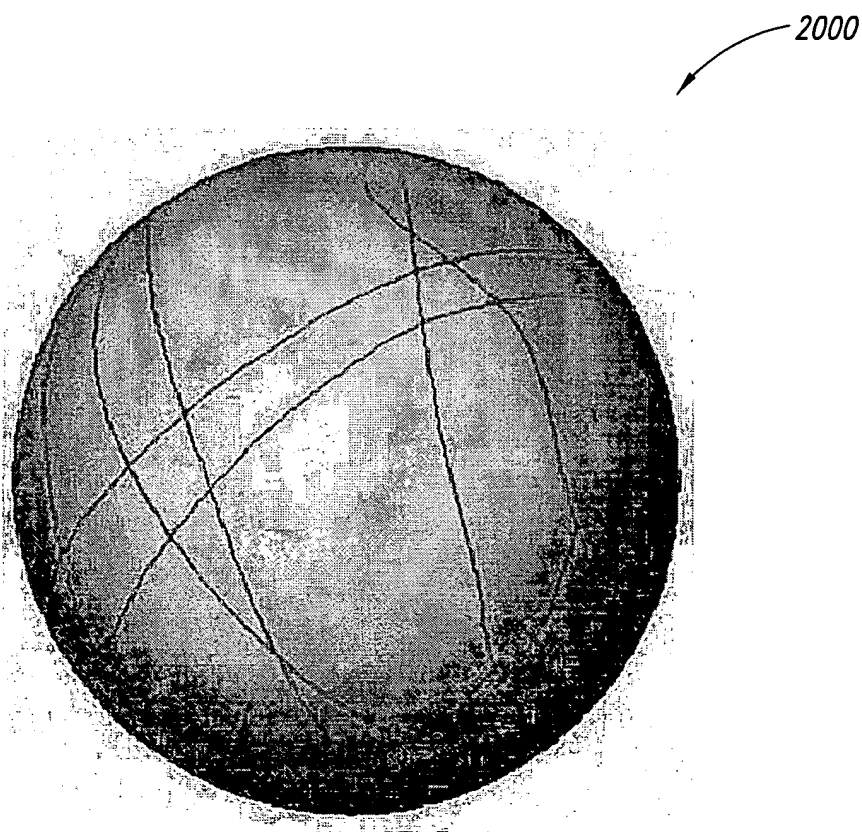


FIG. 20

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

2100

FACIS - Notepad									
File Edit Format View Help									
14 → Total Number of NURBS surfaces									
1 → Surface ID=									
0 → No. of Trimming Curves									
6 → No. of Control Points in the U and V directions respectively									
4 → Order of the NURBS surface in U and V direction									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
638.362042532721	376.973254238598	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358
628.170921454705	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	434.553179937114
523.798014799336	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	407.290023095617
365.89579060415	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	387.360058209881
278.551826510056	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	378.240362218652
240.408896376572	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	437.179024675965
628.170921454705	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	484.012343052245
638.011139257669	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	495.815856825333
534.556578151812	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	485.633513353535
367.208573845722	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	470.023065614624
274.496364207571	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
233.634789973631	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
714.335627190582	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
713.878223982784	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
610.431021054668	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
424.538092030627	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
310.659237075991	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
352.1064780066574	385.553716791075	408.952476151517	388.442166606188	362.951225528533	343.246294508705	385.553716791075	423.20228327624	452.286518152358	
X Coordinate values of the control points									
Y Coordinate values of the control points									
Z Coordinate values of the control points									
Weights									
35.5724284984094	28.8454439530912	1.314704979297	23.3123565340618	72.7417118290362	105.446459119944	28.8454439530912	22.3974635319836	6.2108039286086	11.9086643604494
59.9981035221204	91.809862124638	59.6175046472262	44.3539085379288	2.5474014508054	10.4192239212768	28.1957809544772	35.200014140310		

FIG. 21

2200

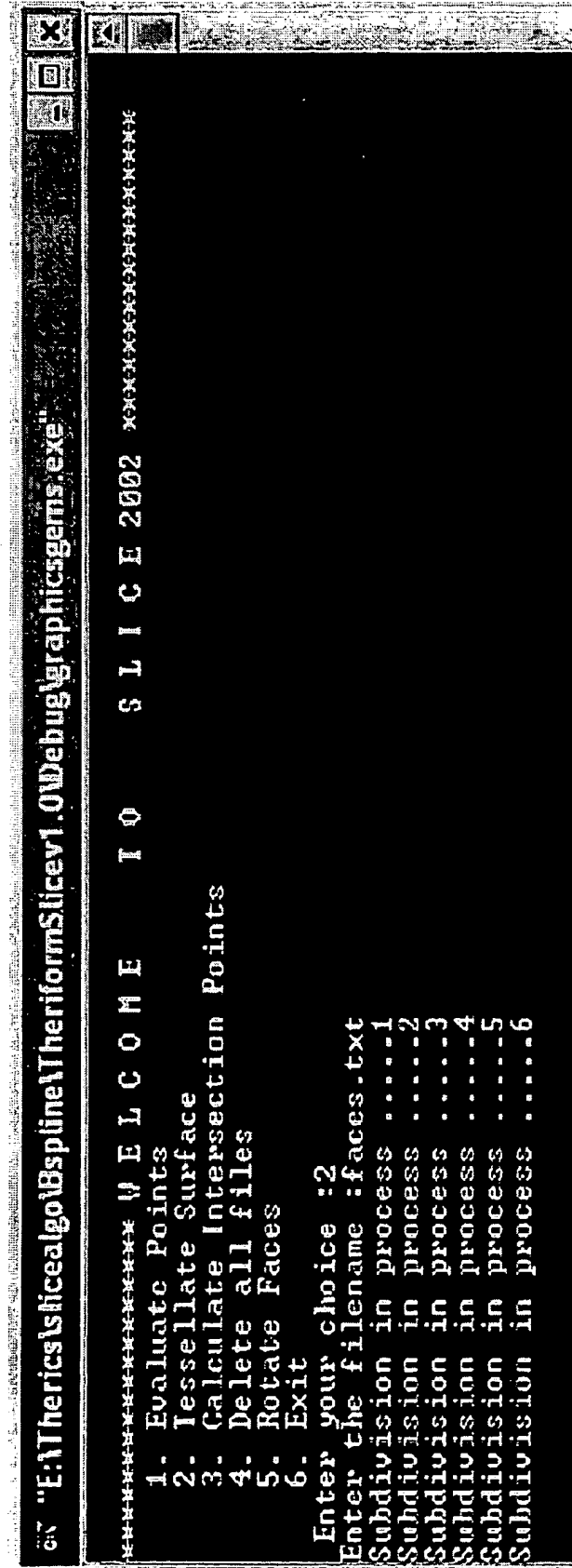


FIG. 22

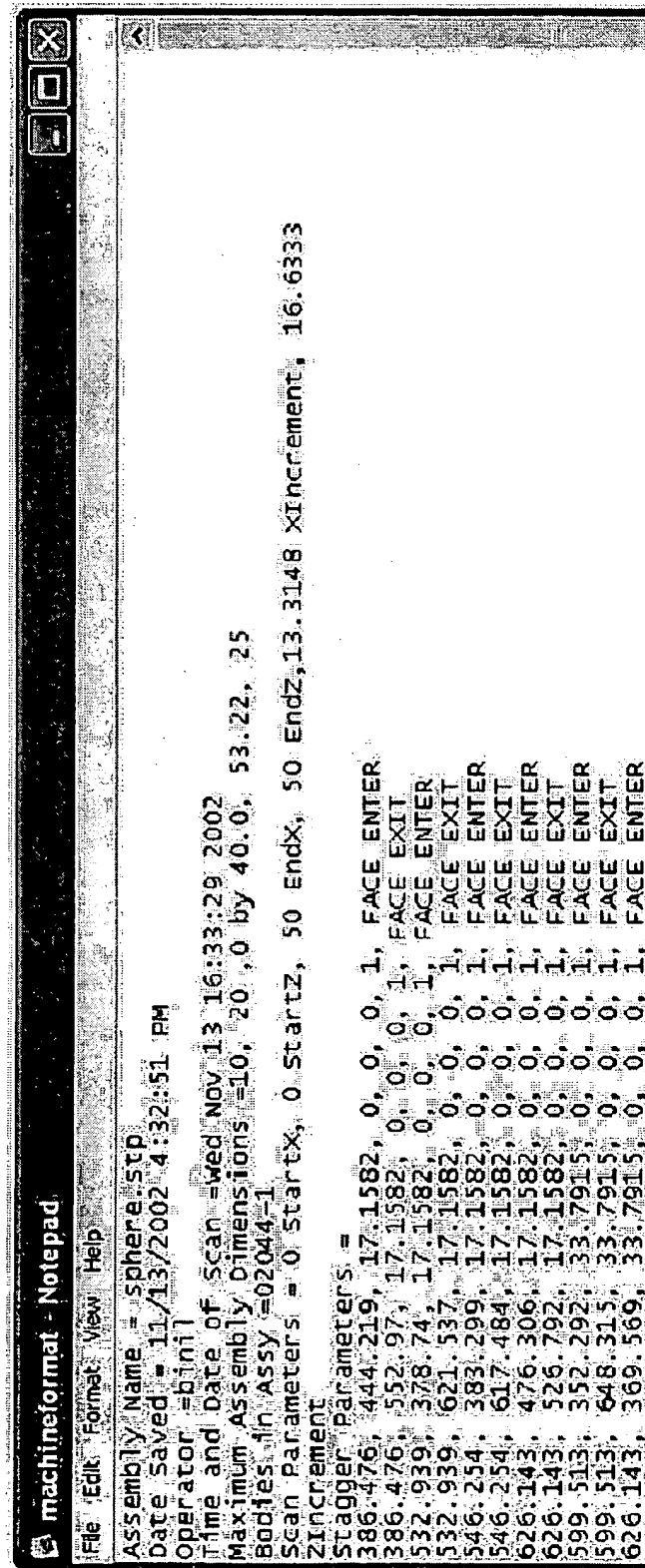
2300



```
***** W E L C O M E   I O   S L I C E 2002 *****
1. Evaluate Points
2. Tessellate Surface
3. Calculate Intersection Points
4. Delete all files
5. Rotate Faces
6. Exit
Enter your choice :3
No of box :7722
Bounding Box Dimensions of Model :998.958 999.766 998.524
Bounding Box Dimensions of Model :0.3459 3.13194 0.524883
RAY INCREMENT :13.3148 SLICE INCREMENT :16.6333
Calculating at height 0.524883 ....
Calculating at height 17.1582 ....
Calculating at height 33.7915 ....
Calculating at height 50.4248 ....
Calculating at height 67.0582 ....
Calculating at height 83.6915 ....
Calculating at height 100.325 ....
```

FIG. 23

2400



```
File Edit Format View Help
Assembly Name = sphere.stp
Date Saved = 11/13/2002 4:32:51 PM
Operator = binil
Time and Date of Scan = Wed Nov 13 16:33:29 2002
Maximum Assembly Dimensions = 10, 20, 0 by 40.0, 53.22, 25
Bodies in Assy = 02044-1
Scan Parameters = 0 StartX, 0 StartZ, 50 EndX, 50 EndZ, 13.3148 XIncrement, 16.6333
ZIncrement
Stagger Parameters =
386.476, 444.219, 17.1582, 0, 0, 0, 0, 1, FACE ENTER
386.476, 552.97, 17.1582, 0, 0, 0, 0, 1, FACE EXIT
532.939, 378.74, 17.1582, 0, 0, 0, 0, 1, FACE ENTER
532.939, 621.537, 17.1582, 0, 0, 0, 0, 1, FACE EXIT
546.254, 383.299, 17.1582, 0, 0, 0, 0, 1, FACE ENTER
546.254, 617.484, 17.1582, 0, 0, 0, 0, 1, FACE EXIT
626.143, 476.306, 17.1582, 0, 0, 0, 0, 1, FACE ENTER
626.143, 526.792, 17.1582, 0, 0, 0, 0, 1, FACE EXIT
599.513, 352.292, 33.7915, 0, 0, 0, 0, 1, FACE ENTER
599.513, 648.315, 33.7915, 0, 0, 0, 0, 1, FACE EXIT
626.143, 369.569, 33.7915, 0, 0, 0, 0, 1, FACE ENTER
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FIG. 24

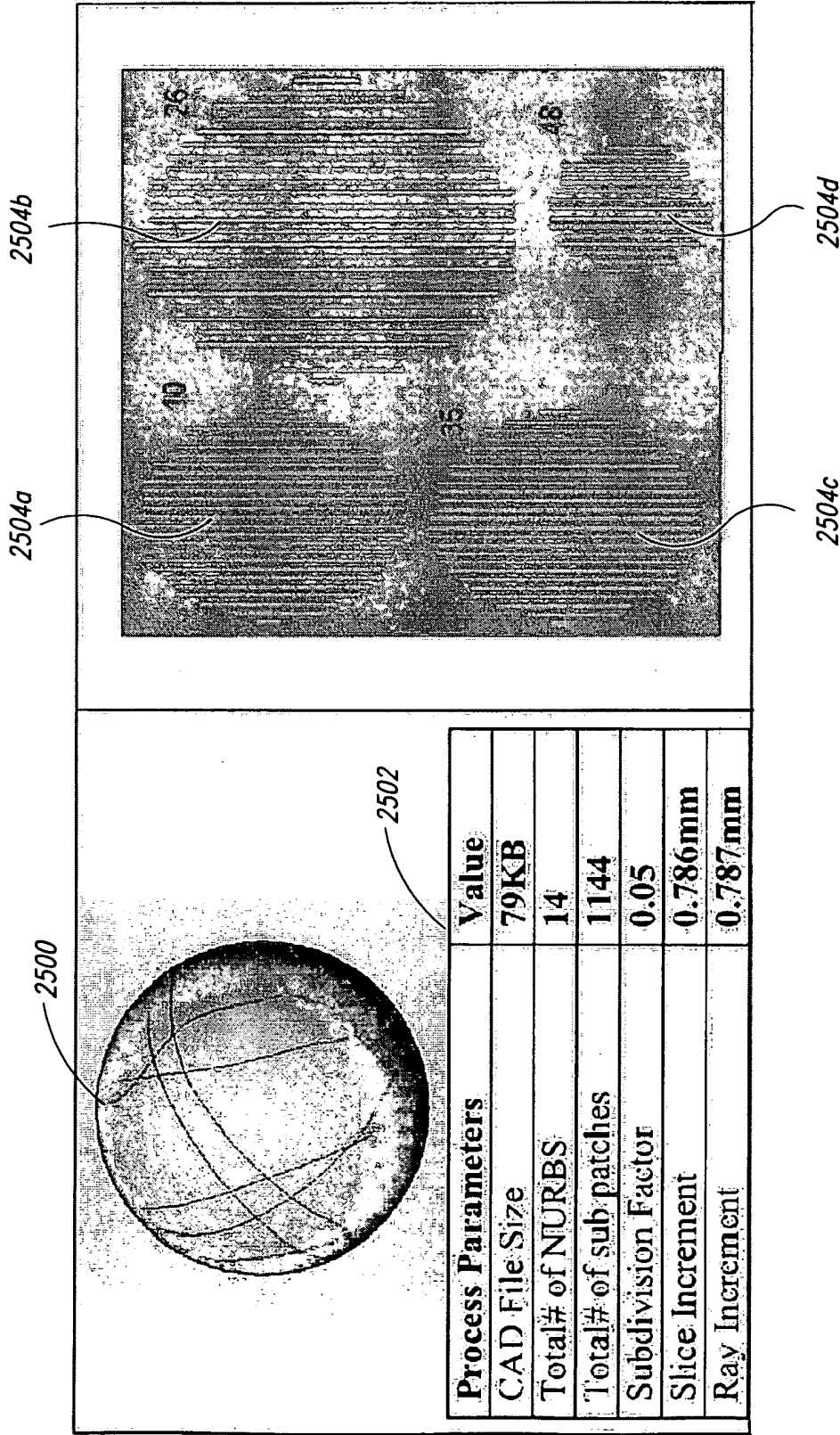


FIG. 25A

FIG. 25B

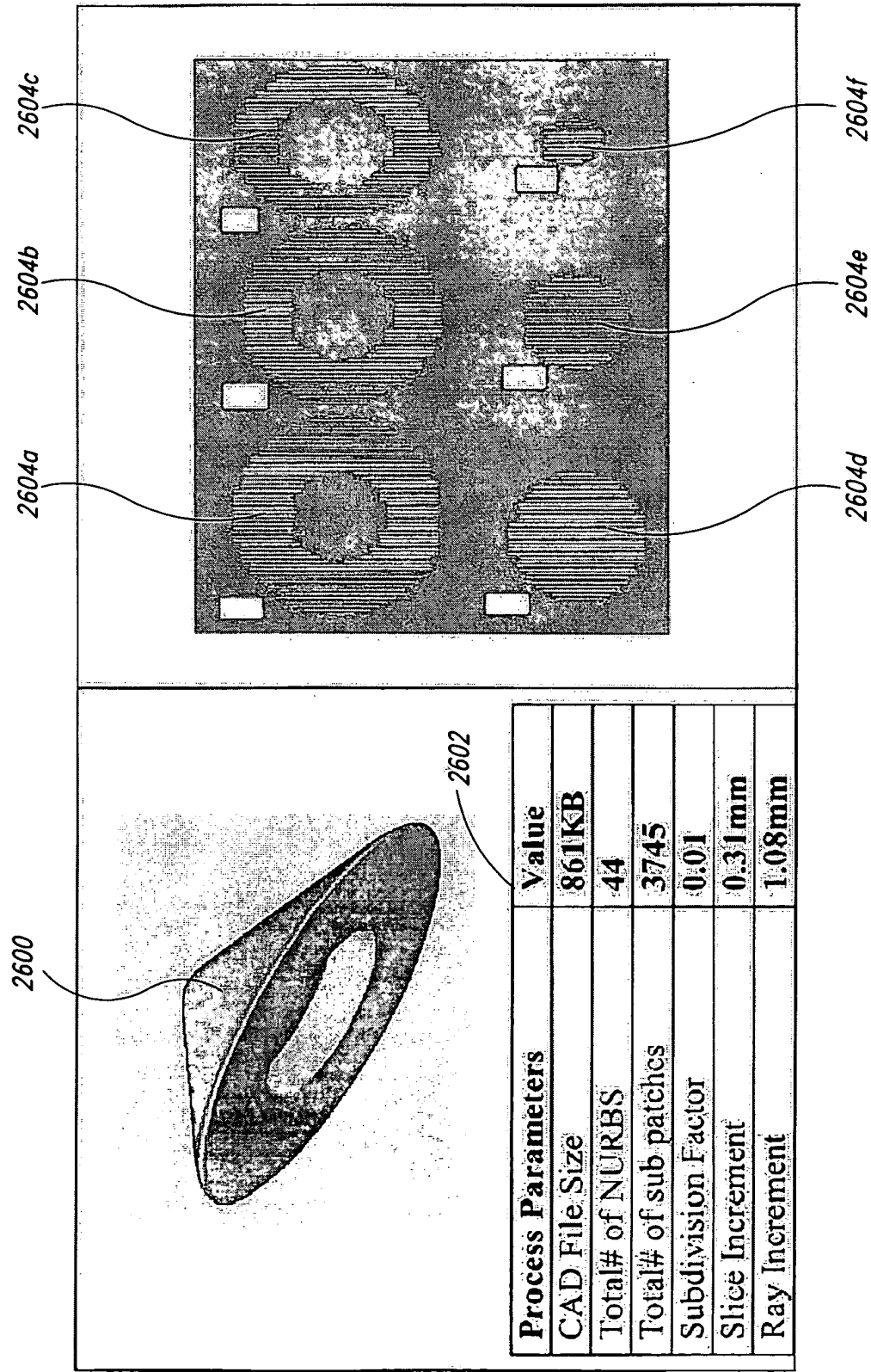


FIG. 26A

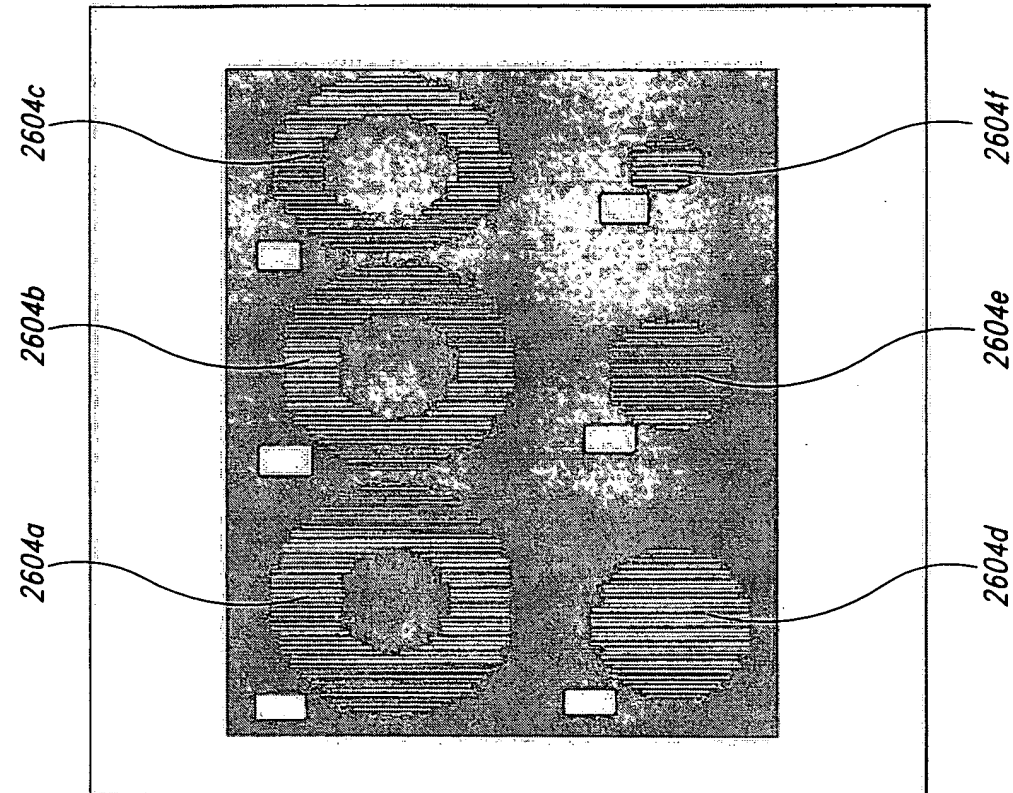


FIG. 26B

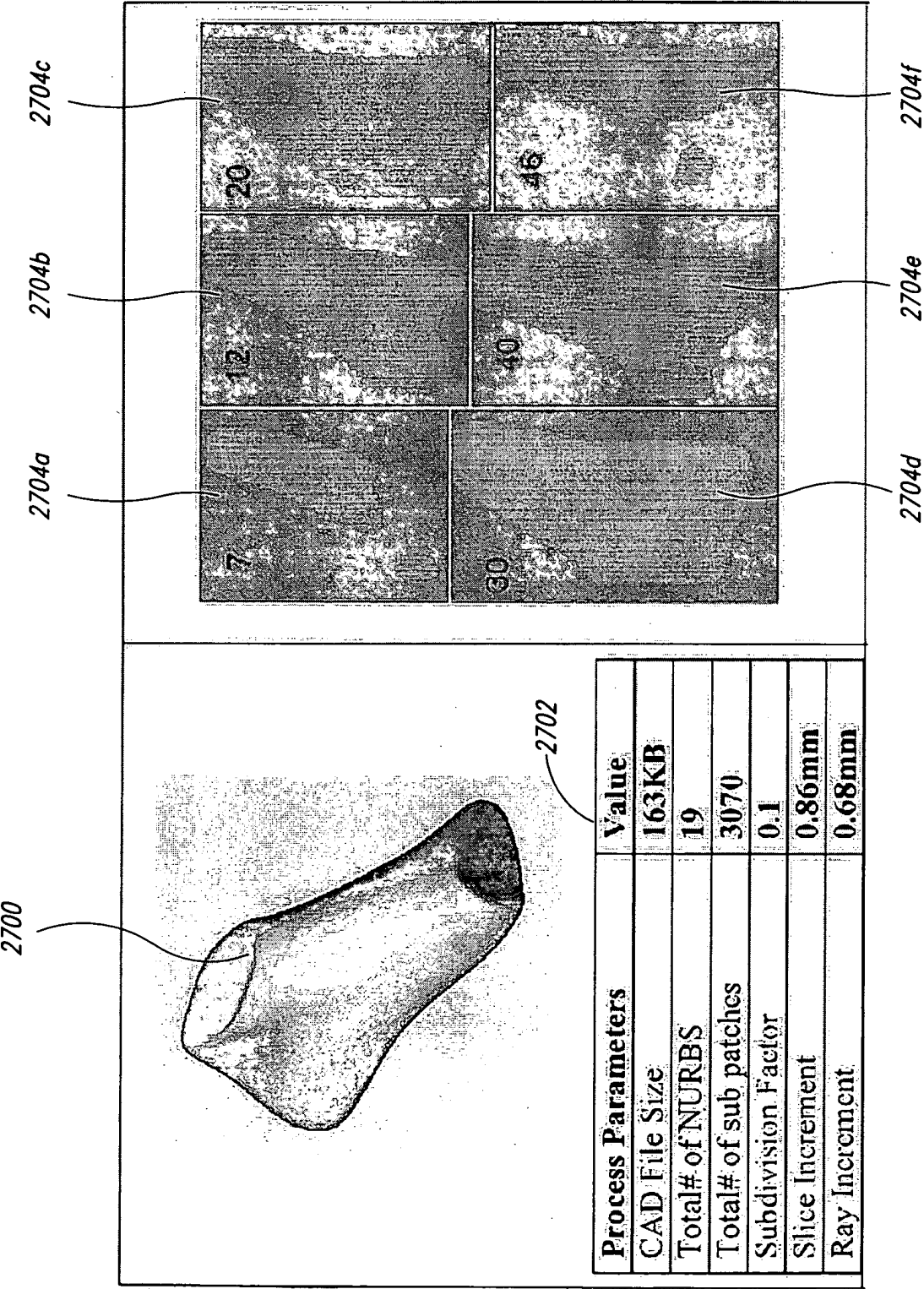


FIG. 27A

FIG. 27B

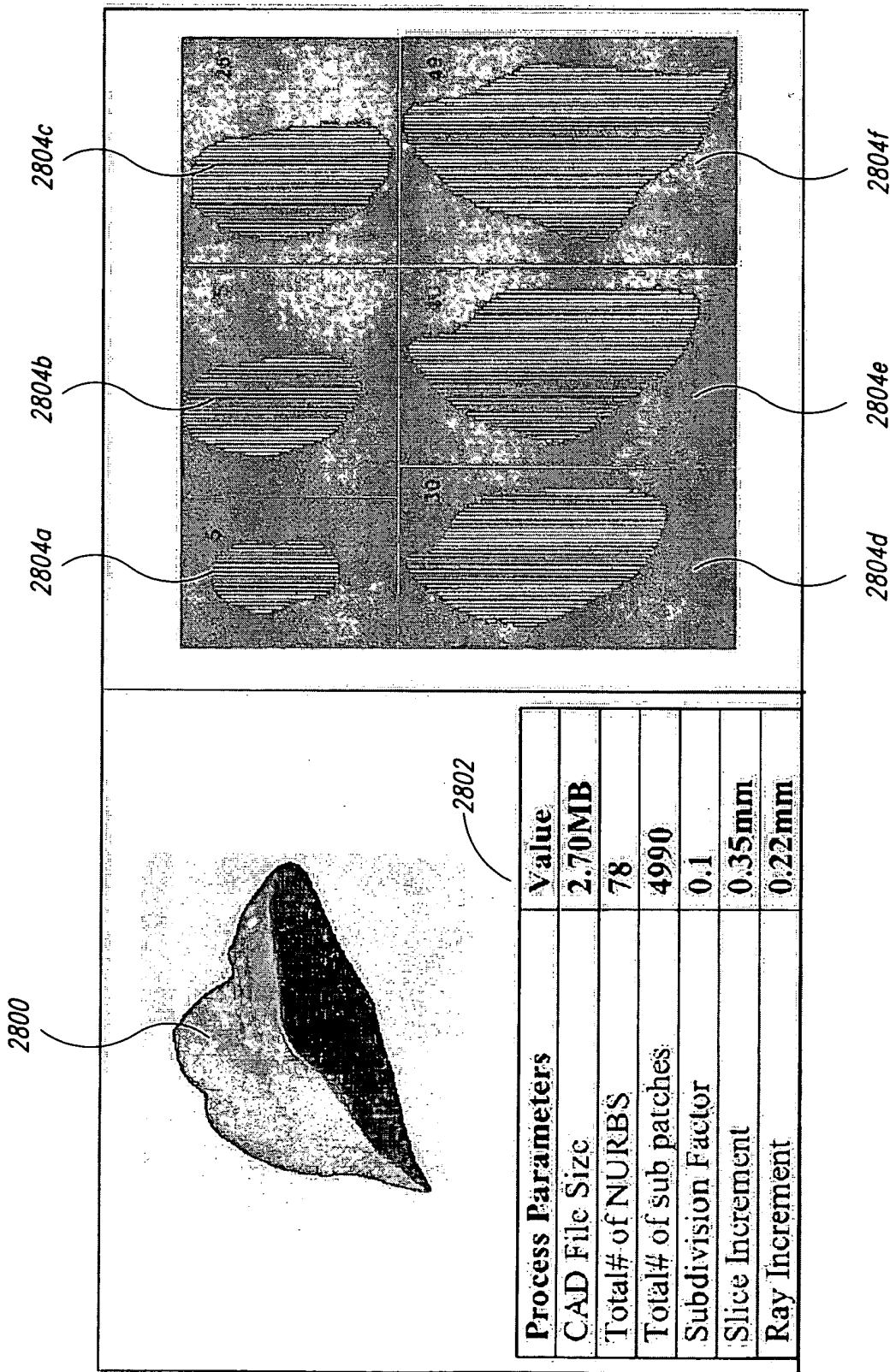


FIG. 28A

FIG. 28B

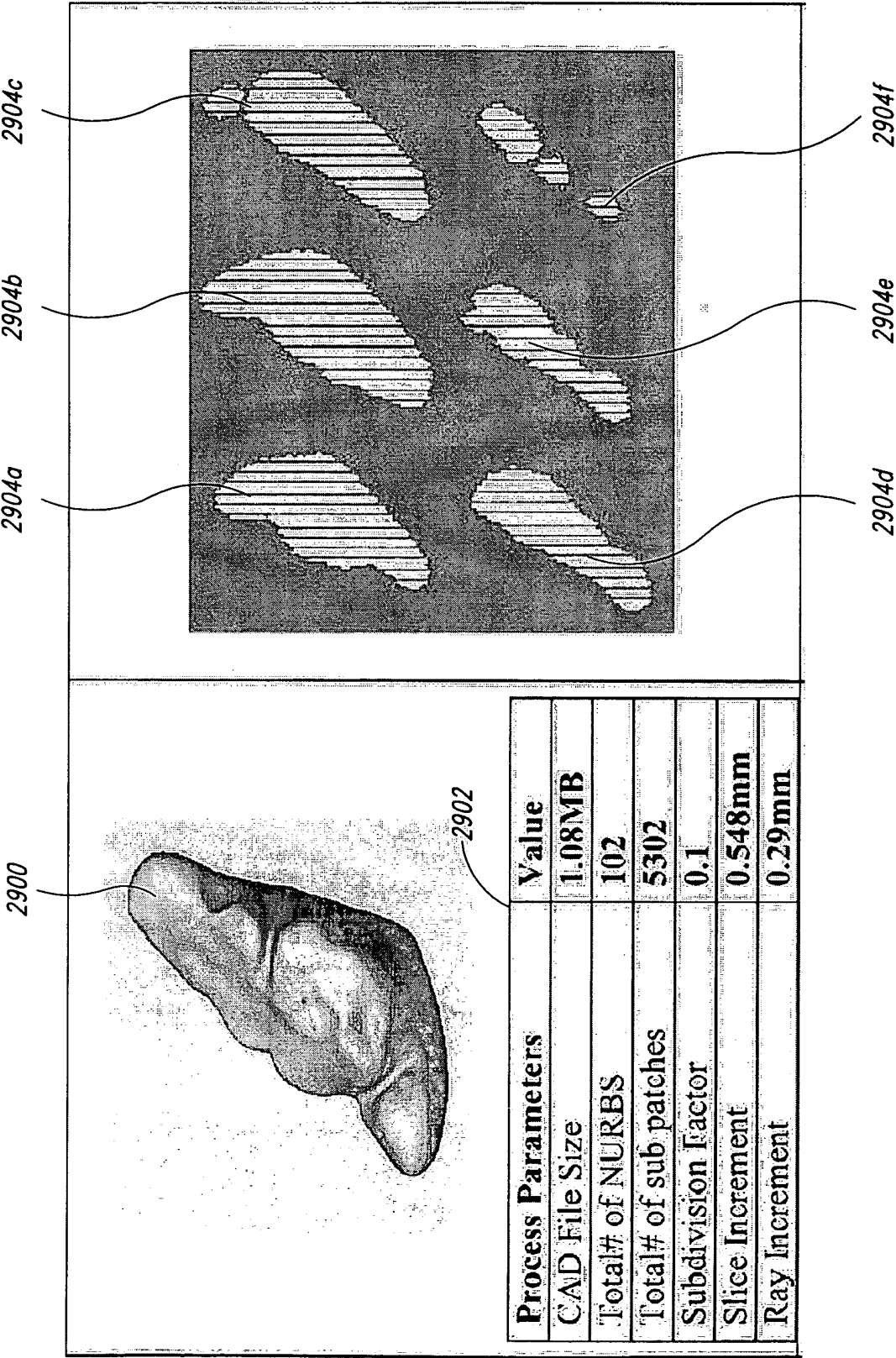


FIG. 29A

FIG. 29B

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

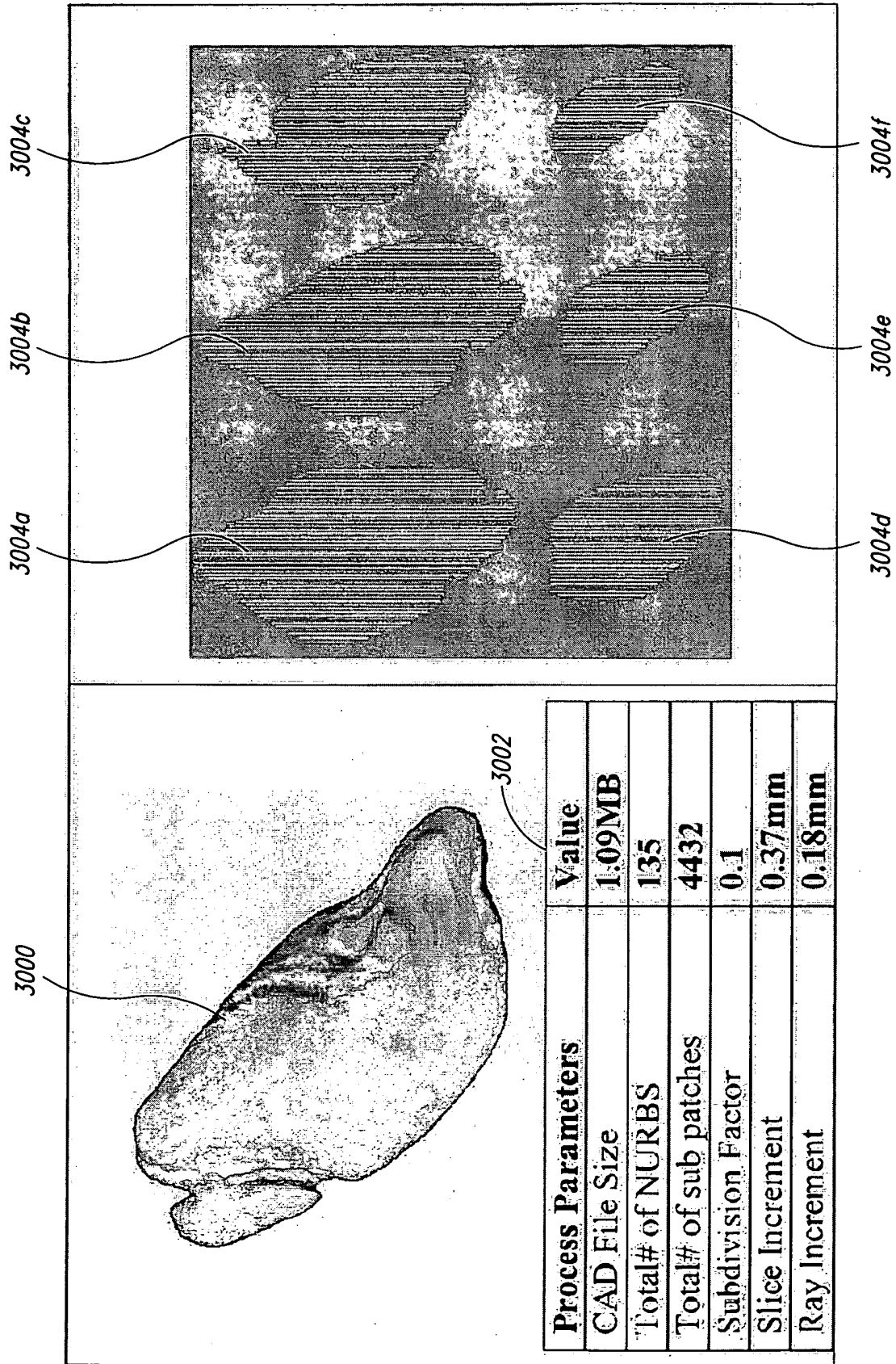


FIG. 30A

FIG. 30B

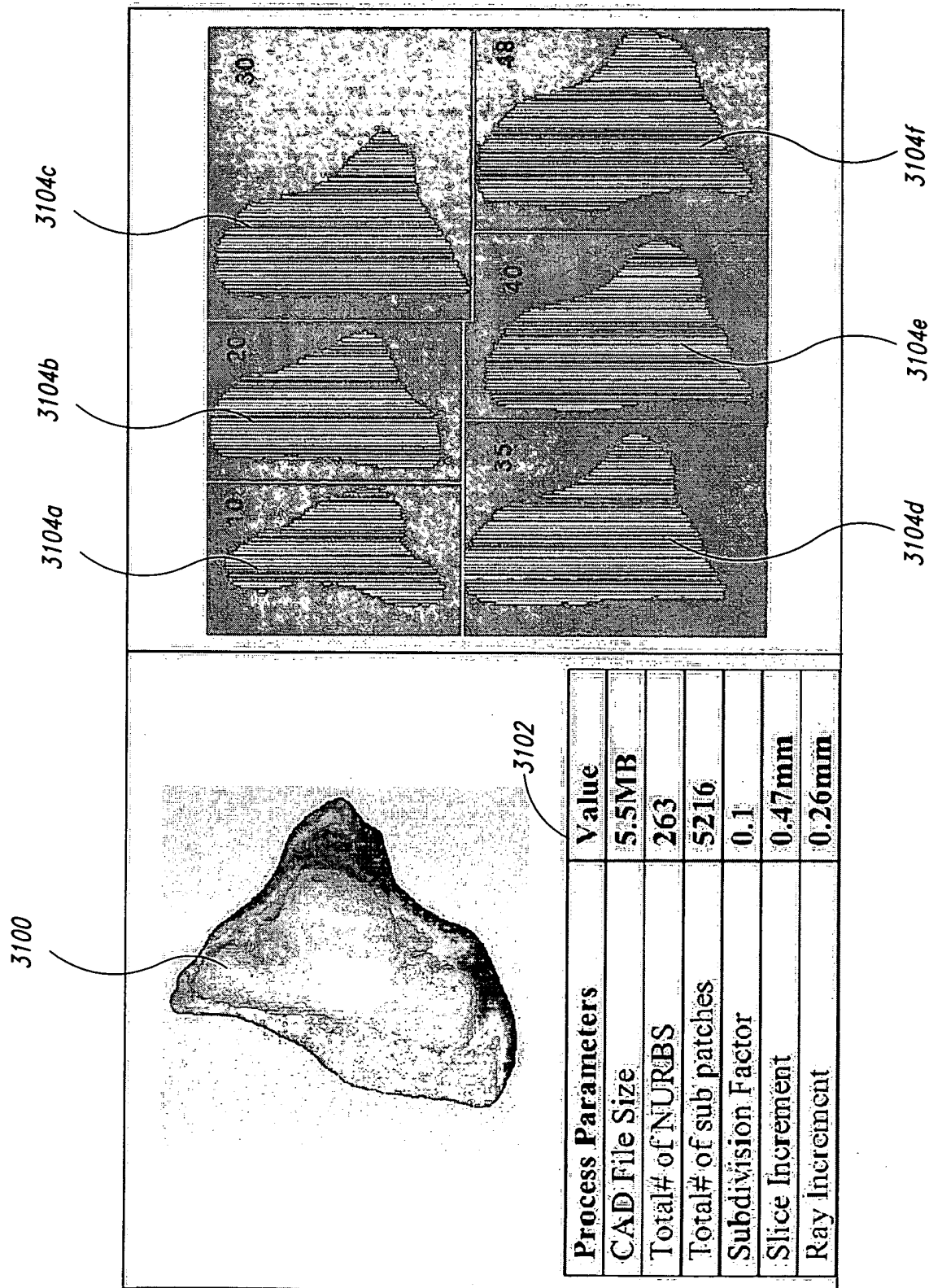


FIG. 31A

FIG. 31B

Title: APPARATUS, METHOD AND ARTICLE FOR DIRECT SLICING OF STEP BASED
NURBS MODELS FOR SOLID FREEFORM FABRICATION

Inventor(s): Thomas J. Bradbury et al. Express Mail No. EV449557458US Docket No. 900122.466

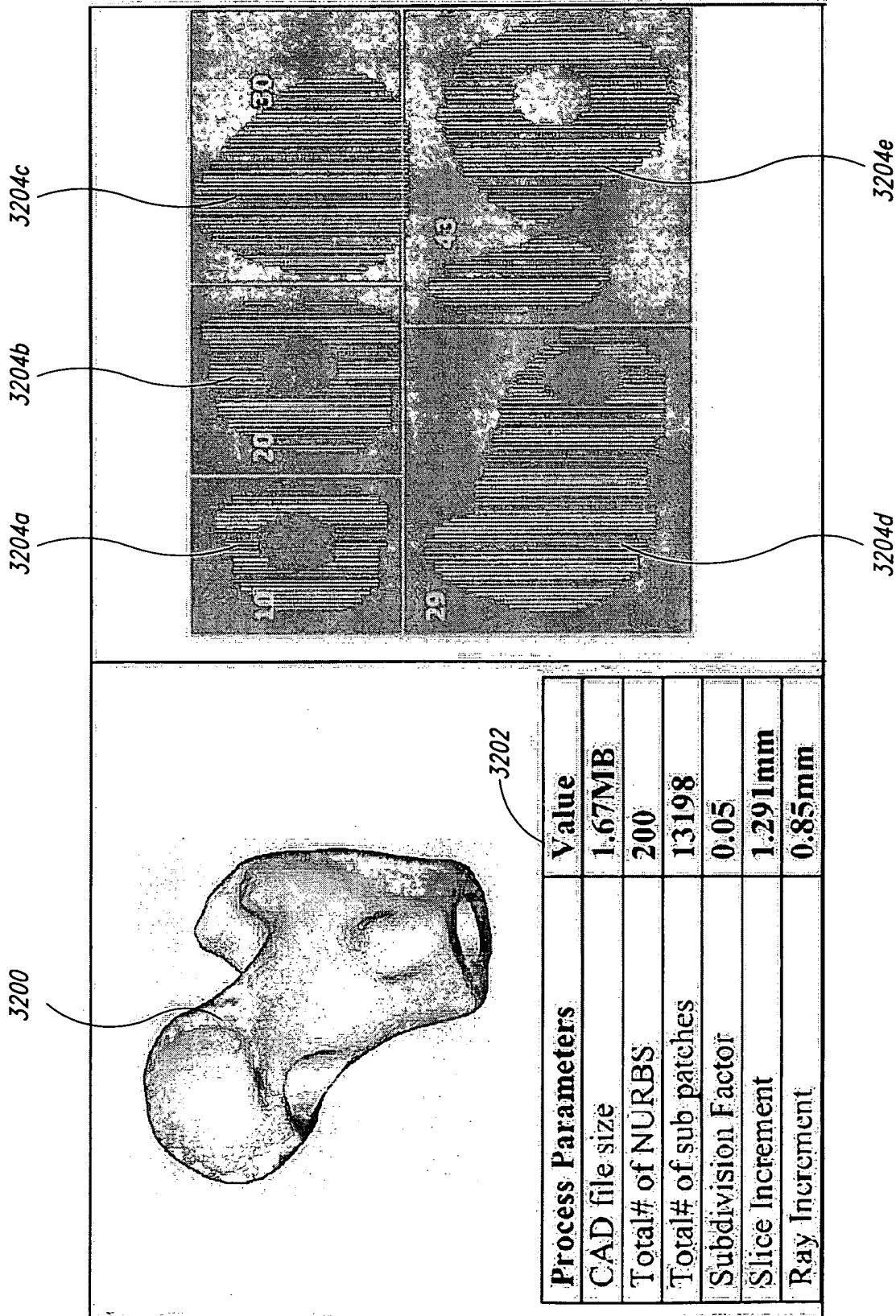


FIG. 32A

FIG. 32B

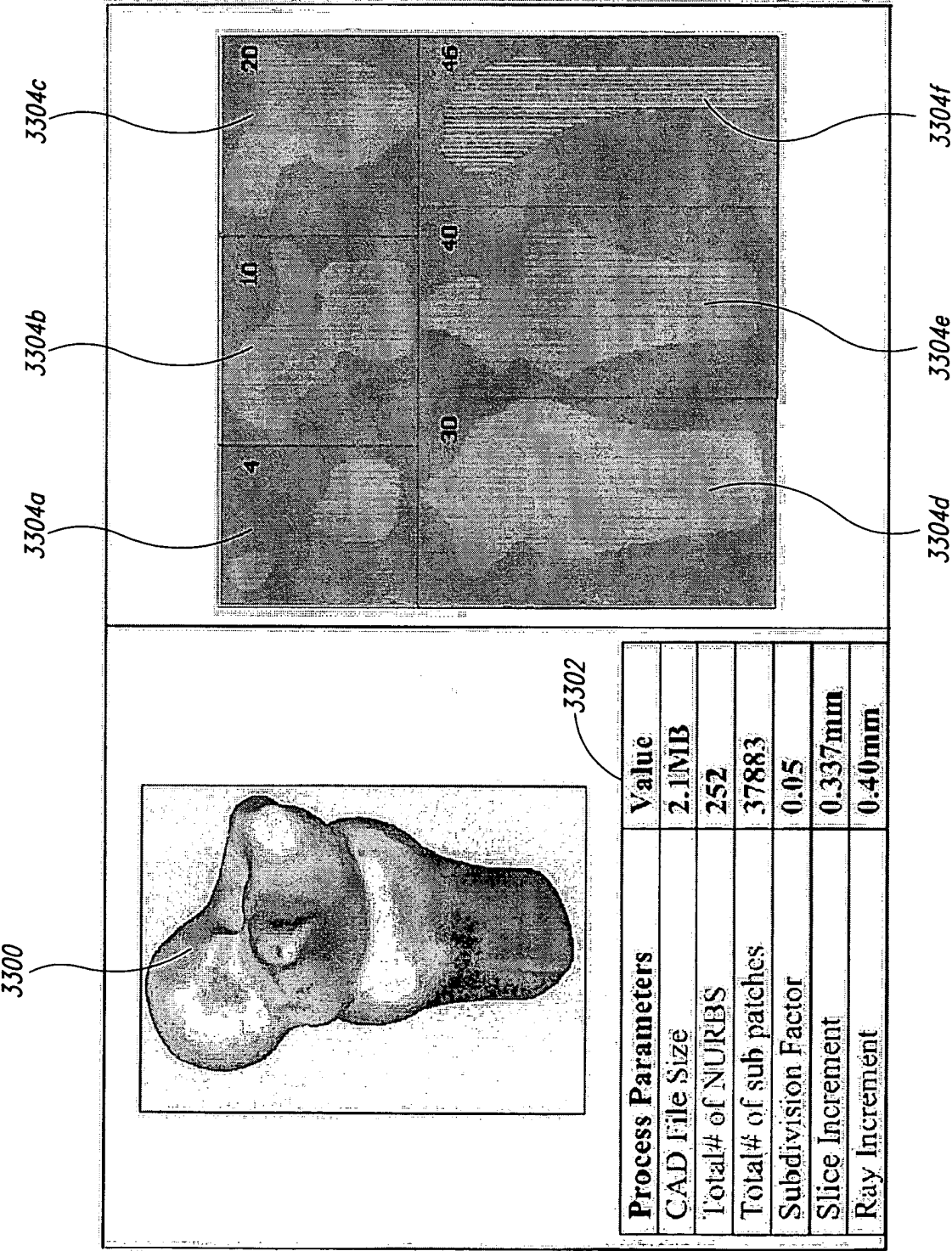


FIG. 33B